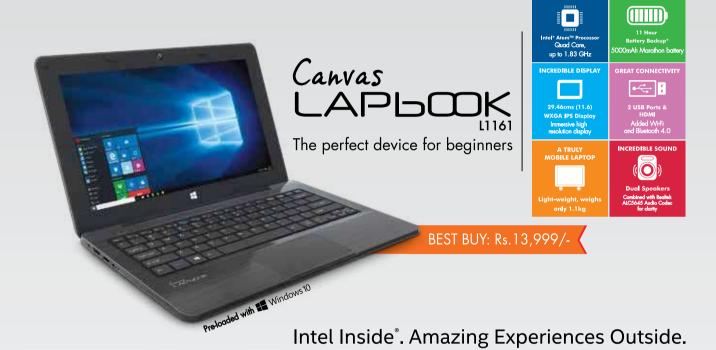






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Unravelling original thought

his has been one of the most difficult months in a long long time. But amid all the chaos, there were certain moments that stood out. One of these was at the IGX gaming event we all (Digit boys and girl) attended. There, at an innocuous but overcrowded booth, we 'encountered' an indigenously developed product and it really caught our collective attention. Dubbed 'The Tesseract', it was a VR solution not unlike the Oculus Rift. The Tesseract was developed by the most unlikeliest of suspects - eagle-eyed engineering dropouts - and I was pretty intrigued when they explained some of the features that made their product original. The algorithm powering their device was its USP - it promised the conversion of not just games but any (yes you read right, any) sort of digital content into 3D. How? The algorithm apparently extracts data before it gets rendered and tweaks it to apply depth perception (resizing objects in the foreground and other jiggery pokery). Humour aside, if done well, the concept has a lot of potential.

All good, right? Then what was bugging me? With phrases such as moonshot innovation, reinventing the wheel, and many others being bandied about way too carelessly in the industry these days, I am allowed my scepticism. While I admired these college students for following their dreams, I wasn't sure if this was just another "me too" concept, but only cheaper. This, unfortunately, is something that our part of the world is notorious for. Therefore, I did a bit of research, talked to industry experts and came across concepts such as IonVR, which are similar to what the Tesseract boys (and girl) are trying to achieve especially in their endeavour to address VR sickness.

So, of course there wasn't any plagiarism here of any sort by these Absentia VR kids – because their product is sufficiently different – and it may just as easily be one of those cases of concurrent innovation. Historically too, many people in the world have worked on problems and found solutions simultaneously. The discovery of 'radio' is an often-cited example.

Still, it got me thinking about the very idea of 'original thought' – again, probably not so originally. A couple of months ago, I wrote a piece exhorting the need for technology infusion into education and governance – both were certainly not ideas that I've manufactured myself (not that I claimed to do so). I'm sure if you dig hard

enough, you'll find not just one, but maybe 10 other people propagating the same idea as far back as a decade ago (or longer).

Here's another example - say I decide to write something on undying computer myths. Covering things like the truth about safely removing hardware, HDD defragmentation, right-click refresh, and so on. Is it an idea I just thought up while writing this editorial at 12 in the night, three days past the magazine closing deadline? Or is it something that is based on a stray Lifehacker piece I probably came across three years ago? Or could it be a How-to Geek newsletter from three months ago? Can I follow these breadcrumbs to unearth the 'seminal' thought that led to these ideas? Possibly.

In one of my very early editorials, I'd talked the theme of incremental change vs. revolutionary change. More than a year later I came across a Quora answer in which I found this quote by Larry Page - "Especially in technology, we need revolutionary change, not incremental change" - as it turns out it's one of his favourite themes for speeches. Did I get "influenced" by him? Although I wrote on this theme before I read his quote, I'm not going to be cocky (or hopeful) enough to assume he is a Digit reader!

What is truly original then, if at any given moment we're a sum total of our experiences and learnings? Is any of what Apple or Google or any other company doing, truly original? Has there been any original thought in this world after Leonardo Da Vinci? Is the proverbial well of new ideas truly running dry? I better stop before I give myself a panic attack.

I'm exaggerating for effect of course (I think) – there have been many instances of original thinking throughout history – but you have to admit, they are rare. Some (if not all) of our cover stories might constitute those rare exceptions (we hope).

What do you think? Have you seen examples of truly original thought around you?



Siddharth Parwatay Managing Editor siddharth.parwatay@digit.in

"What is truly original then, if at any given moment we're a sum total of our experiences and learnings?"



Let me know at: facebook.com/staticsid | @staticsid | editor@diait.in

Hell hath no fury...



Jayesh Shinde Technical Editor – Test Centre jayesh.shinde@digit.in

"Most of all, I was disappointed in myself as I let myself be seduced, forgetting the simple rule that if something seems too be good to be true, it probably is."

Let me know your thoughts on this column at: facebook.com/jayesh.shinde | @jshinde | jayesh.shinde@digit.in

arlier last month, I woke up to a shocking announcement in my daily newsfeeds. In a blog post on Microsoft's OneDrive cloud storage service, they just rolled back an essential feature of their offering exactly a year after they first announced it – unlimited storage for paying customers, of which I was one. In fact the only reason hundreds of thousands like me gravitated towards Microsoft's OneDrive service was essentially that one feature.

To be fair, I should mention that the unlimited OneDrive storage feature also came with a monthly or yearly subscription of Microsoft Office 365 productivity suite. Still, for whatever reason, the company did break the promise it made to customers. The sea of backlash it received from users was evidence enough that the move wasn't well received by anyone.

Most were feeling a lot like me – shocked, angry, disappointed and sad. Shocked because my confidence in a technology company was irrevocably shaken, especially a company that introduced most of us to the personal computing era.

I was angry because I had paid money and felt violated. It was like signing a contract, paying for a service, only for the other party to turn around and say, "I changed my mind, I'm not doing it, and I'm not paying you back either!"

Most of all, I was disappointed in myself as I let myself be seduced, forgetting the simple rule that if something seems too be good to be true, it probably is. What Microsoft was offering at the time fit this bill perfectly since it was vastly undercutting Google and Amazon's cloud storage offerings – like a mirage to a thirsty traveller in the desert, full of promise, but never delivering.

I chose Microsoft's Office 365 plan primarily for its unlimited OneDrive storage option, because of the simplicity it offered. I wanted to digitize, save and share a lot of my family's thousands of photos and videos dating back to the 1980s. What about others like me who flocked towards Microsoft's offerings with similar needs in mind? Microsoft seems to be making a habit out of shooting itself in the foot – remember the free Windows 10 upgrade

fiasco? How this OneDrive decision fits in with their "mobile first, cloud first" strategy is a mystery to me?

In an increasingly digital, tech-focused world, companies (technology ones especially) cannot afford to be so arbitrary. The reason Microsoft put forth for revoking OneDrive's unlimited storage cap was due to the actions of a small number of users who backed up their DVRs and movie collections, and ended up with over 75TB of data per account. Did they really abuse the system the same way Megaupload.com users did to be served with FBI takedowns? Even if they did, why should a large majority of users be held accountable to the alleged wrongdoings of a small minority?

Take Flipkart's Big Billion Day fiasco. Hype the living daylights out of a seminal offering, promise the moon and the stars to your customers and then, for whatever reasons, offer a substandard buying experience to paying customers. I know a lot of first-time online shoppers who got their fingers burnt on Big Billion Day who have gone back to never trusting online shopping again.

Microsoft and Flipkart are just examples, of course. The point I want to make is that of classic over-promising yet under-delivering business practices which have started to creep into tech-enabled companies. The biggest casualties in this whole affair turns out to be customer confidence and trust. But not for long. Payback is a *&^&% because hell hath no fury like a geek scorned!

Jayoh Ohile

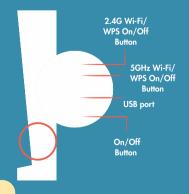




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Saving Private Public

Those of you who've been reading long enough will remember that I'm not the paranoid, tin-foil-hat-wearing type of geek. I don't really see what the big deal is for a government to go through my emails and even bank accounts and phone, if need be. Maybe I'm naive, but I've always felt that if you have nothing to hide, it doesn't matter who looks through your stuff.

No, I'm not saying we should all start changing clothes in public and embrace nudity! Neither am I saying that you should hand your passwords over to the government and give up on any hope of privacy. I'm just saying that unless you're pilfering government secrets, cheating on your taxes, involved with the underworld, not paying parking fines, cheating on your spouse, are a serial killer, etc, you've got no reason to fear a spybot – no, not the one made by the Safer Networking guys, I'm talking about automated surveillance.

Tragedies in India and around the globe (most recently in Paris) would suggest that we definitely need more monitoring and surveillance. It's not nice, no one wants it to be this way, but maybe we should accept that it's needed?

Whatever the case, it doesn't justify what organisations such as the NSA were doing, and neither was it right for John Brennan (the head of the CIA) to blame "unauthorised disclosures" (basically, Edward Snowden's infamous leaks) for the Paris attacks. Former CIA director R. James Woolsey, Jr. wasn't as diplomatic, telling MSNBC, "I think Snowden has blood on his hands from these killings in France".

As someone who lived through it in Mumbai, I can tell you those few days in November 2008 were terrifying and filled with disbelief. I'd rather give the government access to my emails and phone than risk another 26/11.

Of course, the pertinent question is: who watches the watchers? And yes, I think someone or something certainly should. There have to be checks and balances for any system, or else too much power inevitably corrupts.

However, there's a difference between watching everyone and being able to easily watch those you want to. What Snowden's leaks did was show the world that the NSA could break (and was breaking) encryption that was thought to be secure. They were (are?) monitoring email, SMSes, social media, etc. Not just of terrorists, but of the average Joe as well. That really pissed people off. The most affected, however, were companies.

We're talking Google, Facebook, Yahoo and the likes here. They had to ramp up security, if for nothing else than to atone for the embarrassment.

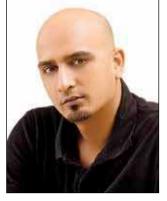
The CIA would have you believe that terrorists were using Gmail to casually chat about their next target. They want you to believe that giving up your rights will help fight terrorism, or else "the terrorists win!" They'll tell you that terrorists shifted to secure services, such as Telegram, all because of Snowden. They want you to believe that all of those innocent people killed across the globe, and especially in Paris, died because of Snowden.

It's hogwash, of course.

What the NSA and CIA (and perhaps such agencies in every country, including ours) really hate is being slapped on the wrists because of people like Snowden. The truth is, Snowden didn't cause the agencies to overstep their bounds – they did that of their own accord. If they'd been more careful and not just acted like dictators, they'd probably still have access to all that they did, and no one would be the wiser. I very much doubt that they'd catch any real terrorists like those behind the Mumbai and Paris attacks using a Gmail tap, but they certainly might have apprehended some of the people who try to go off and join ISIS's cause in Syria, for example.

That said, although more secure Google and Facebook servers are certainly desirable, going the other extreme isn't. We don't want to make it impossible for government security agencies to access critical data that may have been shared over the Internet by terrorists. The spying game has no time for red tape. Imagine if James Bond had to stop and get a warrant for everything he did... he'd never get anything done, Britain would always pay the price and no one would watch the Bond movies – if anyone still does these days.

I think we need to find balance, and to do that we can't vilify Snowden, and neither should we do that to our government agencies. There's a fine line between privacy and protection, and with so many walking that line like a tight-rope, there are going to be quite a few who fall off. Thankfully, this circus has a safety net (held by us) to give them a second shot at it, and that includes both, the Snowdens as well as the NSAs of the world...



Robert Sovereign-Smith Executive Editor robert@digit.in

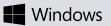
"I'd rather give the government access to my emails and phone than risk another 26/11."

Lewyn Lung

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☑ This is my first letter to Digit ever since I subscribed to the best ever tech magazine available right now in the market. Sorry for the delay in sending the feedback as I was busy with exams. I'm just 13 years old and study in Class 8. A few months ago, I read a magazine and have been mesmerised by it ever since that magazine is the one and only Digit. Firstly, congratulations to the entire Digit team for the newly launched app, 'Tech Tips', which is useful for new smartphone users. While it's nice, it still needs some work. Secondly, the November 2015 issue had many other gadget reviews such as TVs and cameras, in addition to smartphones. The comparison of the resale value, depreciation, etc is really useful for everyone purchasing any new phone. The Google event coverage was well done and I liked it very much. And lastly, the "small book of big thoughts" was really interesting and I loved reading it. Thank you for your valuable reviews, which really help. Please continue to always be the best tech magazine in the future.

-Rudransh Panigrahi

Thanks for writing in Rudransh. The ultimate smartphone buying quide took a lot of brainstorming but we were glad that we could incorporate parameters such as resale value etc which most reviewers usually don't consider. Even if they do, there is no quantification like the kind we did. So yes we enjoyed coming up with it as much as you evidently enjoyed reading it. As for Tech Tips, it would be great if you could send us specific areas that need work. We would be happy to work your suggestions into the upcoming updates to the app. We hope you continue to be a part of digit for many more years to come.

- Siddharth

⊠ Hey Digit,

I'm the greatest fan of your magazine. I know that you guys get this every day but I owe you, guys big time. You'll understand why after I narrate my story.

I was an average Joe when it came to tech (maybe a bit lower than average... okay, way lower than average). I never knew what RAM was or that there were



different types of operating systems (OS) on phones. All I knew was that Apple had an Apple OS and other phones had Android. I didn't even know what a graphics card was. I used to buy my phone by asking the shopkeeper for a phone which had touch, must be able to download games and social media apps and should have a good camera (I didn't even know that RAM, operating systems, screen resolutions and even different processors were to be considered when buying phones). By now, you've probably got an idea of how little I knew about tech. One day, however, I was going through different mags and found your mag among them. (It was the August 2014 issue in which different OSes were compared.) I bought it right away. At home, I found out that there was different OSes and then slowly discovered that there were different RAMs, processors and even motherboards, which I wasn't even aware were there in computers. This is why I owe you guys big time.

I'd like to make some suggestions:

- 1. Can you guys write an article on hacking (the different types of hacking, ethical hackers and the other types of hackers)?
- 2. Can you write an article on ways to

- hack Wi-Fi passwords (unless it's
- 3. Can you please send posters of famous singers, DJs or rappers (Eminem, if you could)?
- 4. As I'm a game developer and a gamer, it would be great if you increased the page count of SKOAR! to 30 or 40.

Now I have one question for you: I downloaded a game and modified it in Windows using WinRAR, but when I converted it back to APK in the phone, it said that package cannot be downloaded. Then, I modified it in Ubuntu (Edubuntu). It started downloading, and then I got a message saying that it couldn't be downloaded. I made sure that all files were in the same format. Please tell me how to fix it.

Also, can you add Cash on Delivery on your subscription? If you do, you'll get yourself another subscriber.

And by the way, is any one of you guys an Eminem fan? Please answer.

Keep rocking like always.

-R Narayan

That journey of discovery and learning you described is what most of us writers also experienced thanks to Digit. It just feels so awesome when all this tech



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Microsoft teaching kids

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Reports show that teens cannot differentiate between Google search result and an ad. http://dgit.in/GSearchAD

LETTER OF THE MONTH

ĭ I'm one of your avid readers from Nepal. If you look at it historically then I'm an Indian but I was born in Nepal, where I live presently. But, then again, I've studied six years in India. So I'm not so sure what my nationality is. But since I have a legal Nepalese citizenship, it's better to say I'm Nepali. Anyway, I

was introduced to Digit in India. I was in Class 6 when I bought my first Digit. We were taken to a book fair in Patna and I was delighted to buy the magazine. I wasn't much of a reader back then, and purchased the mag only for the CDs which had games and videos inside them. But, now, seven years later, I buy Digit primarily for reading. Sometimes, now. I don't even bother to insert the CD into my laptop unless I see some interesting software or video included. So, technically, I've been reading Digit since four years.

Digit is worth buying and I like almost everything about it. The information you all provide is really handy. I just got the November issue today thanks to the strike in the country. Normally, I get my issue within some five days after you publish it (which is still very late for avid Digit readers like me). Please expand your presence here and give us Nepali readers a chance to subscribe to your magazine, so that even we can avail of some offers and get our hands on some goodies.

Okay, now let's talk about Team Digit. I only read Robert's editorial. I don't know why but his articles are very attractive to read. I'm sorry to say, Sid and Jayesh, I don't read your editorials more often. Forgive me for that. The best parts of the magazine are the snippets on the top of the page and

the Sci Tech section. I love the Bazaar section too, as I like reading

reviews of the latest gadgets.

Whose idea was it to bring out the dmystify booklet? Well, whoever came up with the idea, thank you very much. It's really worth reading.

I wish you'd include at least five new or unique software in the CD. Usually, you only give us updates to the last software

you included. We can update them ourselves. Also, could you include the apks of the Android games that you review? Actually, internet here in Nepal is really costly. And not everyone has a fiber or wireless connection at home. It would be very generous of you if you could provide that. It wouldn't take much space, would it?

Finally, you guys are amazing. Keep up this fascinating work. Nikhil Pradhan, aren't you from Nepal? I think I read your article in the May issue. I just wanted to tell you that you're making Nepal proud. At least we have one Nepali working at Digit. I'll write to you all soon. Next time, I'll emphasise more on the magazine than myself and my country.

Lots of love from Nepal. Yours truly,

- Sunny Sarraf

II Hi Sunny,

It was in fact refreshing to hear your story rather than just the usual.

At the same time we can never get tired of hearing about ourselves, so we're looking forward to your next letter too :-)

Yes, the DVD has gotten a little boring of late, but we're trying to improve it. Check out the upcoming special issue DVDs (yes, two this time as well) for some interesting software. The trouble with distributing apks is that there's always the risk of a security issue. And there are also some legal concerns. It was great to hear from you and do keep writing in (even if you don't read my or Jayesh's column).

P.S. Nikhil has unfortunately left Digit, but I'll be sure to forward your mail to him.

– Siddharth

Thanks for reading my letter and replying so soon. You won't believe but after I sent you the letter, I got excited on each mail I received and eventually I got it. Yeah, I will sure be checking your DVDs. I am glad there are two this time. Yeah I understand about the security issue for distribution of apks. I should have thought that before.

And yes, I will surely read yours and Jayesh's column. I am sorry to hear about Nikhil. I would be gratified if Nikhil read this mail. Once again thanks. And I will write a letter soon. Happy Digitizing.

- Sunny

jargon which you couldn't understand before suddenly starts to make sense? If you're interested in ethical hacking be sure to check out the FastTrack on the same topic in this month's DVDs. As for SKOAR! being bigger, we couldn't agree with you more!

- Siddharth

ĭ 'dmystify' - "The small book of big knowledge" is worth gold. I must say each and every issue of this book is

worth reading. I often use it as a reference book to update my scientific knowledge. The books are indeed step-by-step guides towards building up scientific knowledge. Won't it be good if dmystify started covering topics that are necessary to understanding basic computer science and technology? For example, a bi-annual series such as "Electricity & Electronics - I, II, III..etc" every year. Understanding electricity and electronics would be easy if introduced in a step-by-

step manner by explaining computer and technology jargon.

-Dominic M Sangma

Internally we often joke about how Digit is the technology main course and dmystify is the science side-dish. For now we'd like to keep dmystify only to limited to core science but perhaps we could start another book series like we did with Encyclopedia Technica specifically pertaining to the topics you mentioned.

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Inbox

9

ISIS used Telegram's service

Here is what Telegram's founder had to say when asked about ISIS using Telegrams secret msg service http://dgit.in/telegramISIS

Leukemia cured?

it awesome.

Medical science reached a new technological milestone, with this new cure for leukemia. Read on to find out more. http://dqit.in/qene-edit

These will of course be bundled with just the special issues. Let's see, definitely something to consider.

- Siddharth

☑ I've read your last four magazines and loved all of them, however I wasn't too impressed with SKOAR!

The first time I bought the magazine, I thought it would be a rich source of gaming reviews, information on games, shortcuts to games, special features, etc. When I opened SKOAR! I found the Assassin's Creed poster and said, "Wow! This must be the best gaming mag." But then I bought the next issue. Though the poster in this issue was good, it had too many female characters and was of low quality. The next poster was the same.

The games covered too weren't the kind anyone would want to play, such as 'DOTA 2'. Please write about some good games (their screenshots, latest updates, shortcuts, etc) such as 'Far Cry 4' and 'Saints Row 5'.

Everything else is awesome - The epic rap battle, articles about girls who've contributed to the gaming domain, etc.

Please reply as soon as you can. Thanks.

-Prashant Khyalia

Like you, Prashant, a lot of our gaming content readers love the bundled poster along with the monthly magazine, more than the SKOAR issue itself! We have already reviewed Far Cry 4, Saints Row and DOTA 2 in the past. Check through the past issues digital archive bundled in this month's DVD.

- Jayesh

☑ I have nothing much to say in this mail except that the website needs serious updates. Recently, I was showing my friend how useful the digit.in website is. He was looking for a phone with a budget of about Rs.22,000 or so. I suggested that we use Digit's "Find Mobiles" page. Firstly, I couldn't select all of the filters at once. The page refreshed as soon as I selected the budget! (Please fix this.)

However, the embarrassment came when the results showed up. At the top of the list was a phone which was rated 100!

(It shocked me as well) And guess which phone that was? I recommend updating this page of the website quickly so as to make finding mobiles via digit.in easy and more importantly, meaningful!

And as always, keep up the good work! One last request. I love your magazine. Hope to hear from you.

-Vibbansh "The geek" Gupta.

We're embarrassed too, and sorry to have put you in such an awkward position. But rest assured, we're working on it, Vibhansh.

Soham

☑ I'm writing to you after a long time. I really like Digit and consider it the best tech magazine in the market today. The November issue of Digit was really appealing.

Here are some points I'd like to put across:

- The cover story was very good. I loved the comparisons. Plus, 'The Ultimate Smartphone of 2016' was the best of all. I'd really like to own a phone like that.
- 2. Fast Track was nice, but I don't think wearables needed a complete book. It wasn't as interesting as the previous ones. You could have used it as a cover story in a future issue.
- 3. I'm a huge fan of dmystify. It's an amazing concept. Don't ever discontinue it. However, justice wasn't done to the topic 'Evolution' in the November issue. It didn't focus on evolution as such. It leaned more towards the chemical aspect than the biological. It also didn't say anything about the theories regarding evolution, not even the Darwinian theory of Natural Selection, which I expected to be the most important part.
- I'm very upset that you've reduced the number of DVDs. That wasn't a good idea because they're very useful. I await your DVDs the whole month. Please try to restore the number of DVDs.
- I'm not a gamer, but I do like to play 'Need For Speed', one of my favorite games. Thank you for giving an NFS poster this time.
- 6. I believe many of Digit's readers are fiction readers. Or even writers. So

why don't you dedicate a section every month for fictional short stories. It doesn't have to be more than a page. That's all I have to say. Thank you, Digit for being in my life and making

-Shashwat Gupta

Thanks Shashwat! We had a lot of fun working on the Ultimate Smartphone of 2016 story, too. We love Dmystify, too, and will continue to support it with all of our combined efforts as long as possible. Instead of the second DVD, we now manage to provide SKOAR and Dmystify on a monthly isn't that great. Thanks for the constructive feedback. As for fictional short stories, why don't you write one yourself, if you're interested? We may even publish it. Look forward to your next correspondence.

- Javesh

☑ I've been a Digit subscriber since last year and have a few questions for you. Think of the two scenarios below.

- 1. I'm waiting at a restaurant for my order to arrive. Now, I want to read the article I started reading at home in Digit magazine. Do we have an app to read the entire magazine digitally?
- 2. I remember reading an article about resumes, but can't remember in which issue it was. Wouldn't it be helpful if we had a search button to find an article that was published only in the magazine?

Apart from these, I have a couple of suggestions. It would be great to get a dmystify / Fast Track on Quantum Computing, Gravity and Virtual Reality. Also, it would be nice to have articles explaining everyday tech/devices/science. (I've been using Wi-Fi all my life but I don't know how it actually works).

P.S: Did I tell, you guys are rocking? It goes without saying, bro.

-Arun Ponnusamy

Mant to the read entire magazine in digital format? More on that soon. Very, very soon. Meanwhile use Foxit to search through folders, scan this month's DVDs as we have past issues available in PDF format. Thanks!

- Jayesh

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GREED

For those who just want more than should be humanly allowed, we have enough to satisfy your hunger...

THIS MONTH: Firefox Mistral. R2-D2 Moving Refrigerator, Tag Heuer Connected, Sennheiser Orpheus, Cipollini BOND and more...

> TEMPTATION

If you're wondering what to do with yourself or how to spend some time getting cultured, this section is for you...

THIS MONTH: Spectre, Limitless, and your essential pre-Force Awakens Star Wars universe guide and more...

TECHNOLOGY WITH STYLE



Merlin Digital Light Bulbs

Light bulbs with the ability to change colours is cool. Cooler is the colours changing according to music. The LED light bulbs from Merlin Digital are capable of this pulling off this feature. It claims that 252 bulbs can be connected simultaneously over Wi-Fi and the colours can be changed individually. It allows you to choose about 15 million colours from a colour wheel so, you'll have enough freedom to set the lighting in your room.

DESIRE > SHOWCASE

Tesla Model X

A futuristic electric car with a ludicrous speed

fter making the world realise that even electric cars can possess a sense of elegance, Tesla had announced their next iteration with the Model X, an entry into the SUV category. And as expected, the car doesn't fall short of reflecting how cars will be designed in the future. With falcon-wing doors, reminiscent of the DeLorean from Back to the Future, our hero Elon Musk stated that it's the safest car in the world which will receive a five star safety rating. The Model X will now be available to the public and sell in three variants where the cheapest version 70D will start at around ₹53 lakhs. The lower end 70D will be capable of travelling with a top



speed of 225 kmph and cover an estimated distance of 354 km. The mid-variant 90D will be able to travel a distance of about 414 km at a top speed of 250 kmph. The high-end P90D drops the travel distance to 403 km but bumps up the max speed, enabling you to go from 0-100 kmph in 3.8 seconds or just 3.2 seconds if you opt for

the Ludicrous mode. It definitely does sound ludicrous for an electric car to reach these speeds. If the Autopilot feature made your jaw drop and evoked an urge to have it for yourself, the upgrade on this model will cost you ₹1.7 lakhs. Adding up all the possible upgrades will sum up the Model X with a price well over ₹66 lakhs.

Elecom Dux



Macro keys are always welcome by MMO gamers and

to completely fulfil this desire, Elecom has come up with the Dux MMO gaming mouse with 19 programmable buttons.

Pepsi Phone P1s



Pepsi has introduced its crowdfunded

phone sporting a 5.5-inch full HD display with 2GB RAM and 16GB storage, running on a MediaTek MT6592 SoC, priced under ₹14,000.

Bold Motion



HP has partnered with Swiss watchmaker Movato

to create the Bold Motion, a premium and subtle looking smartwatch, compatible with both Android and iOS through Bluetooth.

Figment VR



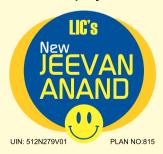
VR headsets aren't small enough to fit into your pocket, but

Figment VR is an iPhone case which can be transformed into a VR viewer with just the click of



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BeoPlay A6

ang & Olufsen has always been a luxury brand for audio Dproducts and the BeoPlay A6 clearly proves the level of intricacy the company goes into building their products. The design is unique which broadly looks like a pillow and the company claims that it enables the sound to fill the entire room. The front panel is covered in high-quality designer fabric made of wool, supplied by Danish studio Kvadrat. The wireless speaker supports a few gestures on the top such as swiping to the right increases the volume, a quick tap skips the currently playing track etc. The sound is delivered through a pair of 5.5-inch woofers, a pair of 0.75-inch tweeters and a single 1.5-inch full range speaker. It can connect through Bluetooth, AirPlay and DLNA, thus expanding the sources to play music. The BeoPlay A6 is quite expensive at around ₹68,000 but it scores high points on the design front.

SPECIFICATIONS

Driver Units: 2x 5.5-inch woofer, 1x 1.5-inch full range, 2x 0.75inch tweeter | **Power Amplifiers:** 2 x 60 watt class D for woofer, 1 x 60 watt class D for full range, 2 x 30 watt class D for tweeter Frequency Response: 35 Hz - 22,000 Hz | Wireless Networks: WLAN - 802.11b/g/n (2.4Ghz and 5Ghz), Bluetooth 4.0

Parrot Bebop 2

t's quite a frenzy out there as more drones start emerging in $oldsymbol{\perp}$ the skies and almost everyone in the neighbourhood buys one. It ain't an abomination yet if you haven't bought or flown a drone before, and certainly you should try to get your hands on one. Joining the plethora of drones buzzing across the countryside is Parrot's Bebop 2. This upgraded drone will be able to stay in flight for about 25 minutes, doubling the amount of time possible in the previous version. Since, this drone is intended to stay light, there isn't a mechanical stabiliser on-board but it's dependent on software image stabilisation. The drone sees through a 14MP fisheye lens, storing all the captured scenes in 8GB of flash storage. The Bebop 2 will cost you about ₹36,000 and it can be flown using either an iPhone, Android or a VR headset device through Wi-Fi. If the VR headset bit caught your attention, the headset which is the Skycontroller will be available in a bundle pack priced at ₹53,000. The drone can attain a maximum speed of 60 kmph, something which would be an amazing experience through the VR headset.





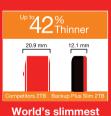
PNY BE-740

ince smartphones haven't been able to get rid of their battery life problem, power banks have become an essential commodity to carry around with you, especially for long trips. Not all power banks are fancy enough but regular bars or slabs of battery enclosures. The BE-740 power bank bank from PNY packs a 10,400mAh battery inside a sleek body which gives a good grip owing to the curved design. It also houses an LED torch on one end. The design is quite attractive and you would definitely want your friends to see and hold the power bank. The power bank charges devices quickly, thanks to the 2.1A output, and you can expect about 2-3 full charge cycles for your smartphone. It has an LED indicator to notify the battery left through four levels. The device comes with a one-year warranty as well.



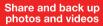






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Pico

 \mathbf{I}^{f} you love coffee you might probably buy a coffee machine, but what if you love beer? Would you buy a beer brewing machine for your home? Many would say brewing beer is an art and PicoBrew is on an ambitious journey to make it easier. Having already released a table-top brewery earlier, Pico is their latest project to dumb down the process of brewing beer, also making the unit more smaller and cheaper. Standing on your table at only 12-inches tall, the little machine will be able to spew out 5-litre batches of beer. Of course, this unit doesn't house the keg and in no way is the Pico intended to be a portable brewing machine. Don't expect your beer to be just a tap away since brewing beer isn't just a couple of hours work and it needs about a week for fermentation. The brewing process is further made easier with PicoPaks which are pods containing precise amounts of hops and grains. These recipes give you control over the alcohol content and the bitterness of your beer. Pico is said to hit the markets in early 2016, costing about ₹68,000.





Gibson Neat Widget

f there's a podcast or talk show in the making and you've been looking for mics, then this product should catch your attention. Gibson has unveiled a new set of microphones combining a retro and futuristic design to the body. Named as Widget, there are currently three variants, all capable of acting as a fine piece of art on your desk. Not just a podcast, but if you aren't of the enthusiastic kind, you can use these mics for regular Skype calls as well. The A, B and C variants are green, red and blue in colour respectively. All of them have an adjustable height shockmount and pop filters to minimise sudden bumps in the volume. These mics connect directly to your computer using USB hence you wouldn't have to bother about pre-amps or adapters. The Widget mics will selling at a price of around ₹6,500.

ECIFICATIONS

Transducer: Internally shock-mounted sensor | Polar Pattern: Cardioid | Frequency Response: 20 Hz - 20,000 Hz | Output: USB 2.0 | Sample Rate/Bit Depth: Up to 96 kHz/24 bits | Weight: 0.81 kg







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InFocus Kangaroo

he size of computers are drastically falling and we already have them in the form factor close to a pen drive. The major disadvantage of these PC-on-a-stick is fewer number of USB ports to connect more devices. InFocus believes that they have found the solution to this problem through the Kangaroo, a smartphone-sized portable PC running Windows 10. This device has a clever solution to fewer ports with its detachable dock housing an HDMI port along with two other USB ports (1 USB 2.0 and 1 USB 3.0). It isn't a powerful computer which is running on an Intel x5 processor but will surely get you through with regular work for up to four hours. The Kangaroo is priced at around ₹6,500 which is a steal considering the other competitors and the specs this device offers.

SPECIFICATIONS

Processor: Intel x5-Z8500 | RAM: 2GB LPDDR3 | Storage: 32GB eMMC | Expansion: MicroSD slot | Security: Fingerprint scanner Weight: 200g





DJI Osmo

 $S_{\text{elfie sticks are moving on to become old school where}}$ everyone and their grandma has one. Offering a way stronger offshoot to a selfie stick, you should be looking forward to DJI's new product, the Osmo. For starters, this isn't a selfie stick but much better than that. Mounted on a 3-axis gimbal stabiliser, the camera is capable of shooting 4K videos in 60 frames per second and full HD videos in 120 frames per second. The gimbal on this device seems like a downscaled version of the same present on the Phantom 3 Professional drone. You'll still require a smartphone to act as the viewfinder of the camera and also to access the various internal settings of the camera. The Osmo also sports physical buttons for basic functionality such as a record button and to changes modes for the gimbal. It would have been interesting if the camera module was replaceable or better if the gimbal had a mechanism to hold a smartphone.

SPECIFICATIONS

Camera Sensor: Sony Exmor R CMOS, 12.4 MP | ISO Range: 100-3200 (video), 100-1600 (photo) | Video Resolution: 4K (3840 x 2160) up to 30p, FHD (1920 x 1080) up to 120p | Storage: MicroSD card slot up to 64 GB | Battery: Li-Po 980mAh | Weight: 201 g

Philips Hue

hite and yellow just doesn't cut it anymore. To save us from this mediocrity, Philips with their Hue series of LED light bulbs let you change colours at will. We received the regular Hue series of 9W LED light bulbs and effortlessly set them up across our office space. The best location to place the bulbs, hands-down, was behind one of our test TVs, setting up an elegant mood for the room. The colours are controlled using their own app with a range of 16 million colours which we can't possibly experience in one lifetime. The app also lets you pick colours from your environment – a feature useful when you're setting up the lighting according to your date's evening attire. The colours can be changed on the fly and can also be dimmed down, with hardly any visible latency between operating the light and the app. Things got really interesting after we integrated the bulbs with IFTTT. Overall a lot of fun.





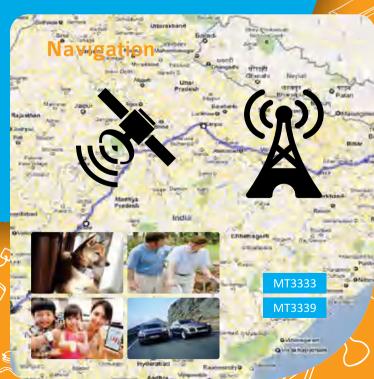


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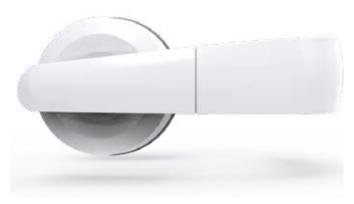




DESIRE

TAKE MY

Here is where we keep an eye on crowdfunded projects that will make you go 'Shut up and take my money!'



Mask

he name might sound unimaginative and not even relate to the actual product, but Mask is an interesting product from Dashbon. VR is slowly becoming the buzzword and we are seeing a lot of headsets in the making. Most of the existing headsets either require specific content created for them or you'll have to place your phone on the headset to act as the display. What Mask does is that it mirrors the screen of your smartphone on to the headset for you to enjoy content through the headset. It isn't clear whether there's going to be any sort of depth perception yet. The interesting feature about Mask is that it also acts as a headphone so, you'll not just be able to enjoy videos but also audio content. Mask costs about ₹26,000.



Ampere

martphones nowadays are shipping with wireless charging and even though they aren't able to charge up your devices quickly, getting rid of wires is a notable gesture. There are already many wireless charging kits available, either shabby looking or expensive. Ampere is a wireless charging power bank with a capacity of a mere 2,700mAh. It also acts as a phone holder so you can place the phone inside while the charging continues. Yes, it does sound amazing but the device isn't compatible with every phone, currently only supporting a few Apple, Nexus and Samsung devices or devices with Qi-wireless charging capabilities. Ampere won't burn a hole in your pocket since it's priced at around ₹5,200.



Revols Earphones

t's quite rare to come across the right shape and size of an earphone which fits perfectly in your ear. Sometimes, they fall off easily and fail to give you a snug fit. Custom built earbuds aren't favourable since they are quite expensive and take a lot of time to manufacture. Revols wants to change this by offering earphones that can mould itself according to your ears inner shape in under 60 seconds. The earbuds initially come in a gel-based state and once triggered to mould inside your ear, it turns into a hardened shape. Revols is wireless and it claims to give up to 8 hours of playback. The pair of custom-fit wireless earphones will cost you around ₹13,000.





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DESIRE

This month we feature a deceptive modular phone, another bezel-less display and a crazy selfie-centered smartphone...

oogle's Ara Project is still a long way from reaching the consumer market. Several new smartphone manufacturers are trying to emulate the same modular concept in their devices where some of them have almost been successful like the Fairphone 2 (which technically isn't a modular smartphone). Now, a German company is preparing to launch their own version of a modular smartphone called the Shift5+ but looking at the pictures it is difficult to determine how they intend to replace the components where the company claims that users will be able

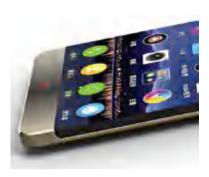


to swap the battery, display and other important components. We believe that the high-end components will be available so that users can upgrade their phones and as for the base specs of the device, it has a 5-inch display, an undisclosed Qualcomm processor, 2GB of RAM and 32GB of storage, 13MP camera on the rear and a 5MP camera on the front and finally a

battery of capacity 3,000mAh. Another interesting feature about the Shift5+ is users getting the option to select the OS between Android or Windows 10 while ordering the phone. The company is set to start taking pre-orders from December at a price of around ₹28,000 but the phone isn't going to start shipping before the third quarter of 2016. Even if this doesn't turn out to be a truly modular phone, considering the number of projects springing up around the concept, we might see one sooner than we think.

ZTE Nubia 11

he demand for bezelless phones are rising, clearly stating the dislike for the ugly contours on the sides of the displays. Sharp was the first one to come out with a bezel-less phone called the Aquos Crystal and now we are looking forward to the Nubia 11. As seen on the previous Nubia Z9, this phone also



incorporates the Frame Interactive Technology (FIT) which enables specific features with the help of certain gestures and swipes on the side on the device. Coming to the specs of the phone, it has a 5.2-inch 1440x2560 display with a pixel density of 565ppi. It is powered by a Snapdragon 820 processor along with the Adreno 530 GPU, and 4GB of RAM with 128GB of internal storage. The rear camera has a 20.7MP sensor while the front camera has a 13MP sensor. The design does seem quite elegant and is expected to hit the market early in the next year.

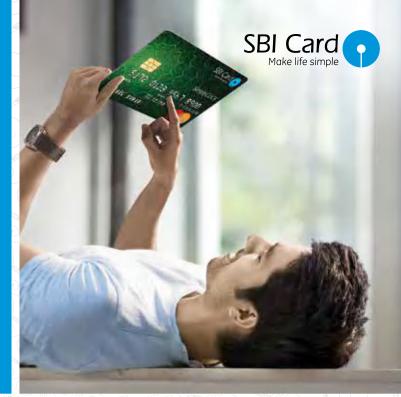


Meitu V4

'here's no stopping people from clicking selfies and understanding the hunger of users vying for more, companies have been enhancing the front camera. So much, that a smartphone manufacturer named Meitu has officially announced their next device to be sporting a 21MP camera on the front, the quality which can't be determined yet. Apart from the humongous sensor, the phone has a 5-inch AMOLED display with a resolution of 1080x1920. It runs on a MediaTek MT6795 processor along with a PowerVR G6200 GPU. The device has 3GB of RAM and 64GB of internal storage. The Meitu V4 is priced at around ₹36,000.

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GRFFD

FXAMTNE

Here we look at what's hot in the world. From cars to bikes and everything in between, the stuff on this page will definitely make you salivate. Even more so when you know we have these beauties in the test labs right now!



Firefox Mistral

e have always been graced with several expensive, leisure gadgets and vehicles at Digit and this time, we received a road bike that goes by the name Firefox Mistral. Wasting no time, we took it out for a ride on a bright sunny morning, something rare among us since no one's a morning person. The bike comes in three different sizes of 52, 54, 56 cm for its rigid alloy road frame and a rigid alloy for its front suspension offering a sturdy and comfortable sense of handling. Even at high speeds of about 40-50 kmph, we didn't experience any kind of wobbling as we swept across the highway. We'll be honest, the stock saddle isn't the most

comfortable out there and while we cycled for a stretch of about 15 km, our bottoms weren't at their comfortable best. The gear system is the most important component for bikes in this category, and it's put to the ultimate test while climbing slopes. After reaching the top of the slope, in fact, one of us was left gasping for breath. Shifting gears on the Shimano groupset was strictly an acceptable experience but at times it was slow and not seamless. The brakes seemed weak, and wet roads could have helped us give a better judgement. Overall, the bike seems the right combination for price and features, selling at around ₹33,000.

iRobot Roomba

obots are taking over all our Chores, even menial tasks such as cleaning the floor. Robotic vacuum cleaners sound amazing, but are they efficient enough? The iRobot Roomba 880 made its way into our office and since then has been assigned a duty of the highest order, cleaning our office floors. The Roomba was able to navigate its way across the room full of furniture with the help of a suite of sensors on-board. The device doesn't have an extra-ordinary design nor is it attractive but it does what it's supposed to do pretty well. We mercilessly placed obstacles around the confused robot, and the Roomba took its time, eventually finding its way out. It supports scheduling



so, during those nights we spend at office, the sneaky robot came back to life and diligently got his job done. It can operate up to two hours on battery and one interesting feature is that it automatically docks up when the battery reaches 10 percent and also when it feels (robots are people too!) that the entire room has been cleaned. We wish that we could have used the Roomba with our cats. considering the frenzy it would ensue. One more worthy mention about the cleaner has to be its Cliff Detect sensor and being heartless we made the Roomba travel to a flight of stairs and it changed its direction away from the stairs as soon as it neared the edge.



No. 1 in Motherboards





		System with OS	System	Barebone	
CPU		Intel® Quad-Core N3150 Processor (Up to 2.08 GHz) / Intel® N3000 Processor (Fanless Design)			
OS		Windows® 10 Home	Microsoft® Windows® 10 32-bit / 10 64-bit / 8.1 64-bit / 7 64-bit comp		
Chipset		Intel® N3150 / N3000 SoC			
Memory		2GB DDR3L-1600MHz (1 x 2GB)	4GB DDR3L-1600MHz (2 x 2GB)	N/A	
		Supports DDR3L 1600MHz, 2 x SO-DIMM slots, Max. 16GB			
HDD	eMMC	32GB eMMC	N/A	N/A	
	mSATA slot	Supports 1 x mSATA slot	128GB mSATA SSD	Supports 1 x mSATA slot	
	2.5"HDD	Supports 1 x 2.5" SATA HDD			
LAN		Gigabit LAN			
WiFi		802.11ac + BT 4.0			
Audio		Realtek ALC283			
Front I/O		1 \times USB 3.0, 1 \times USB 3.0(Type-C) , 1 \times IR , 1 \times Audio-out with MIC-In			
Rear I/O		2 x HDMI, 1 x DP, 2 x USB 3.0, 1 x LAN, 1 x Kensington lock			
Power Unit		36W/12V Adapter			
Dimension		110mm (W) x 46mm (H) x 118.5mm (L)			
Controller		Remote Controller			
VESA		Bracket included, supports 75 x 75 and 100 x 100 mm			
Volume (Liters)		0.6L			

(White)







Silver





USB 3.0

Monitor

The brand and product names are trademarks of their respective compani

Any configuration other than original product specification is not guara



GRFFD This month we have a look at a life-size R2-D2 mini-fridge, headphones with an amp encased in Italian marble and more. Droolworthy?

R2-D2 Moving Refrigerator

This is the droid you're looking for

ver had one of those moments where you curse about not being rich enough or not being able to buy expensive merchandise and toys? Well, here's another one to hurt you even more if you're a Star Wars fan. The R2-D2 moving refrigerator is a life-size replica of the classic robot R2-D2 from the Star Wars universe which doubles as a mini-fridge. The attention to detail is remarkable and the sounds are also similar to the droid from the movies. It can be controlled using a remote control around your house, so you could command it to bring you a chilled can



of your favourite beverage at will. If you overlook the excellent replication, and the capacity of the fridge concerns you then you must know that it can hold up to six cans of whatever you wish to stash away. Among the bevy of Star Wars branded products dropping in the market, this has to be one of the best. Now comes the most painful part, the price of this masterpiece. You and I definitely won't be the ones who could afford it since our beloved droid fridge costs a staggering ₹5.4 lakhs. But if you are in fact looking forward to bring this home, do invite us over for a drink.

Tag Heuer Connected

Step aside Apple Watch

s we prepared ourselves with A the onset of premium Android Wear smartwatches, Apple Watch had already set the bar quite high by offering expensive and luxurious variants. To change the game, Tag Heuer has released the Connected, an Android Wear smartwatch priced close to a lakh in INR. Why does Tag Heuer decide on such an exorbitant you ask? For starters, the smartwatch is made up of mostly premium materials including a titanium case and a 240ppi scratch-resistant sapphire crystal display. It is IP67 certified and comes with carbide-coated titanium bezel on the 46mm diameter watchface



and anti-fingerprint coating. Not just high-quality materials, the Connected comes with a 1.6GHz Intel dual-core processor with 1GB of RAM and 4GB of storage while the 410mAh battery will offer a decent battery life. In terms of connectivity, it comes with Bluetooh and Wi-Fi. Being an Android Wear smartwatch, it's also compatible with iOS devices but don't expect it to function as smoothly on Android devices. The Tag Heuer Connected's textured rubber straps are available in seven colours. Broadly, it seems that Apple Watch now certainly has a smartwatch competitor representing the Android ecosystem through Connected.





Multimedia Headphones



HAPPY HEAD

Bluetooth Headphone with Mic

40mm Drive Call button Mobile / Tablet compatible



Gaming Headphone with Mic



7.1 Simulated sound effect

Built-in sound card

3 meter sleeved cable + USB Jack



Metal Head

Deep bass • Adjustable MIC • Padded earcups 3.5mm • 2M Sleeved cable • 50mm driver Volume control



Electro Head

Deep bass • Color changing LED • Movies Soft earpads • Gaming • 3.5mm • MIC Sleeved cable • 50mm driver • Volume control

Multimedia Headphone with Mic



Flat cable • 1.35m Cable • Call button



Rockstar

Mobile / Tablet compatible • 40mm Driver

Jack Sleeved cable • 1.2m Cable • Mic • Call button



Storm

JACK

Mobile / Tablet compatible Rubber finish • Mic • Call button 40mm Drive

Zebronics

JACK

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Sennheiser Orpheus

Headphones so good, they might just make you cry

here's hardly anyone on earth who would argue against the quality of the legendary Orpheus which was launched back in 1991. priced at around ₹10 lakh. Now, more than two decades later, Sennheiser has launched



an updated Orpheus, skyrocketing the price to a breath-taking ₹36 lakh. Yes, take a minute to let that sink in. Although the blindingly crazy price isn't only for the headphones but with the tube amplifier and DAC combined, it sure does make one go back to ensuring whether they read the right amount of zeroes in the price. "Is it freakin made of gold?" some would ask. Well it is made of platinum (at least the diaphragms are - 2.4 micron platinum). What else, you ask? The Quartz tube bulbs are encased in Italian marble! Now that's something.

Cipollini BOND The perfect Italian love child?

\//hat happens when a supercar manufacturer and an iconic bike manufacturer have a love child together? What happens if they both are Italian? The offspring is an elegant piece of craftsmanship exuding class and luxury. Maserati and Cipollini came together to make the Cipolloni BOND road bike possible. It boasts a patented construction for the primary triangular monocoque along with the rear axle fitting, called as the Atomlink. The same 54cm frame is said to be quite sturdy, offering a considerable amount of resistance to stress. The appealing bike is covered with a blue and white paintjob, branded with the trident Maserati logo. For those interested in the important technical specifications of the bike, it consists of an Ultegra mechanical groupset, a rigid looking Selle San Marco Aspide racing saddle and Fast Forward F2A alloy clinchers fitted with 25mm tyres. The bike will be retailing somewhere around the price of ₹4.5 lakhs.



Signal



If you are the tinfoil wearing kind, living under the constant fear of surveillance, Signal is a highly secure communication app for you. Coming from Open Whisper Systems, the app ensures that none of your messages are intercepted while in transit. You can allow the app to replace your default messaging app and securely lock the app with a passphrase. Free calls and texts can be exchanged within the app with other Signal users, acting as a regular IM service with support for

sending and receiving multimedia content. If you don't want to take our word for how secure Signal is, perhaps it would comfort you know that even Snowden recommends using it.

App Store: http://dait.in/SignaliOS Play Store: http://dgit.in/SignalAnd

Fitso



If you've always wanted to do something about your constantly devolving fitness level, but never had the right kind of motivation, perhaps Fitso is what you've always been looking for. Pitched as an app to bring together fitness enthusiasts with professionals near you, Fitso features several useful sections. Activities will allow you to discover running and cycling meets conducted around you while Events does the same for any

kind of a fitness event. Professional users can also post short articles on specific topics such as Yoga, Diet, Running etc and the regular users will be able to refer and employ those habits in their daily lives.

Play Store: http://dgit.in/FitsoAnd

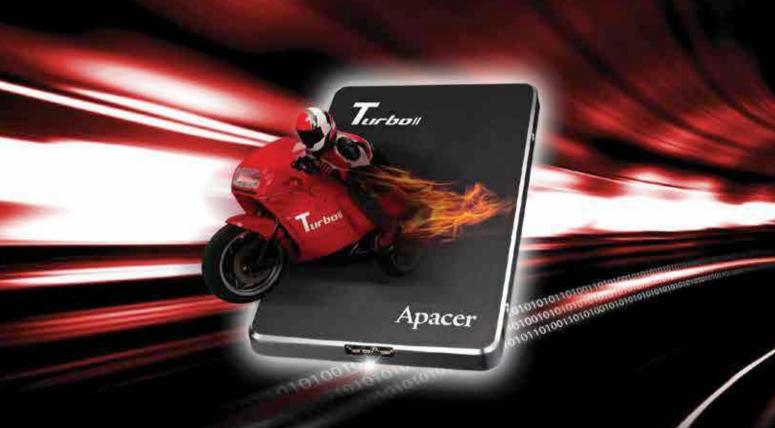
Prepathon



There are numerous websites and apps to take courses on specialised subjects. There are hardly any services which offer subjects falling under entrance tests and the ones that do, aren't really doing a great job in offering a seamless learning and browsing experience. Prepathon has a user-friendly UI with sections including Learn, Discuss and Coach. Under Learn you can browse all the tests available under your selected

course (CAT, IBPS, JEE, SSC). The Discuss section will let you post your queries or scroll through queries posted by other users. You'll also have access to a personal coach who will guide you and answer any type of doubts you have related to the courses. And the best part, everything is free.

Play Store: http://dgit.in/Prepathon



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AS710 USB3.0 Portable SSD







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TEMPTATION

In this section, we put stuff through the grinder and closely examine what comes out; everything except gadgets, because there's more to life than just that

MOVTE

An attempt to evoke nostalgia

he 24th Bond movie, Spectre, tries to evoke a sense of nostalgia in its viewers who have watched the older movies. We wouldn't spoil the movie but it shouldn't be difficult to recognise the references made to the previous movies. Whether you find them appealing is quite subjective but a decent attempt.

Along with the short trip down memory lane, Sam Mendes comes back as the director, and teamed up with cinematographer Hoyte van Hoytema (of Interstellar fame), both presented a wonderful looking backdrop to the movie. It doesn't fall short on action, and Christopher Walken delivers a brilliant



performance. Now that's reason enough to make you watch the movie. The only shortcoming of the movie is the cliched espionage plot which takes a considerable amount of time to build it up. The plot broadly looks similar to the one we watched in Mission Impossible: Rogue Nation and it doesn't stand out as a Bond movie that you would expect.

Rating: ★★★☆☆

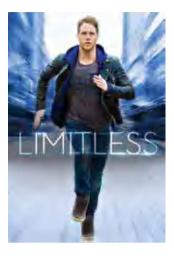
- Abhijit Dev

TV SHOW

Say no to drugs, say yes to NZT-48

any TV shows are following the path of adapting movies to the small screen but haven't been successful in doing justice. Limitless is another such series which picks up where the movie ended. It brings back the highly notorious NZT-48, a pill capable of boosting up your intelligence and brain productivity. For the TV show, you really don't need to catch up on the movie since the show keeps references to the movie at a minimum.

If you've already watched the movie, the pilot will get you edgy owing to the eerie similarity to the plot. Of course, the elements depicting his enhanced cognitive abilities are different, thankfully, which obviously seem absurd but considering the premise set by the rare drug, it doesn't sound far-fetched. This time around, our protagonist, Brian Finch, sees himself in the middle of a murder, the reason being no surprise of people trying to procure the clear pill by hook or crook. Chased by the FBI, Brian takes advantage of his acquired intelligence to narrow down the killer and he does it in no time. There's a short cameo by Bradley Cooper as well, establishing



the magnitude of his role in the NZT-48 universe.

Considering how the plot unfolds at the end, the series will eventually take the investigative thriller way similar to Sherlock. We know Mr. Holmes is already gifted with a remarkable sense of deductive abilities, leaving no requirement for a pill and he does solve the most complicated cases. Therefore, we would expect Limitless to showcase the most impossible crime cases one can hardly imagine. The series didn't feel like a drag, only because they introduced new examples about how the drug could affect your brain and bring out phenomenal outcomes. We'll be looking forward to more.

Rating: ★★★☆☆

- Abhijit Dey



The X-Files Fox Mulder and Dana Scully return to the a new chapter of the popular sci-fi horror show The X-Files as they continue their journey to investigate weird, unexplained case files.



Second Chance The upcoming sci-fi crime show follows a plot where a dead police officer is brought back to life by a billionaire and bioengineer duo-genius. The show is inspired from the novel Frankenstein which is quite evident.



Jessica Jones Marvel's Jessica Jones is a new series by Netflix which sees Jessica Jones putting an end to her superhero career and opening up her own detective agency

TEMPTATION

Bored out of your wits? Can't think of any fun thing to do? Worry not, we'll take that burden off your shoulders in our Things To Do section every month. Read on!

Awaken the Force

A short guide to prepare yourself for the upcoming Star Wars movie

Are you a Star Wars fan? Whether yes or no, it doesn't really matter since you'll only be deemed worthy if you accomplish the following and get yourself acquainted with everything about Star Wars, well almost. There is no such thing as too much Star Wars, never forget.



Movies

Watch Episodes I - VI, twice! No thrice! Goddammit! Watch 'em till your eyes bleed. Those who're Star Wars virgins can be forgiven for thinking that the newer trilogy isn't blasphemous but if you think Jar-Jar was a titular character then you might as well jump out of the window. If you do manage to get your hands on the DVDs with the director's commentary then you won't regret it one bit.

Animated series

Aside from the movies, there have been multiple animated series over time and some of which have been declared cannon. But even the ones like The Clone Wars do elaborate upon certain elements





of the mysticism that we know as the Force. Please skip episodes 15.16 and 17 of season. three for the sake of not #\$%@ ing up one of the most central elements of the Star Wars universe.

Extended universe

Fan fiction isn't a recent thing and with a universe that originated in 1977, the fans sure have been busy coming up with backstories of every single important character and when that was done with, they went ahead and made up new characters and then elaborated upon their backstories as

well. If you are indeed serious about plunging deep into the Star Wars universe then grab a hold of this timeline (http://dgit.in/ SWCanonTimeline) and start reading the novels in the proper order.

Jedi or Sith?

Conflicted ... you are ... young Padawan~ Pick a side ... you must! Take one of the numerous online personality quizzes or perhaps take two and figure out where your loyalties lie. Do you follow the righteous path or one that is wrought with destruction and mayhem? Or perhaps you don't fall in either category and you're more content being a Gundark in the jungles of Dromund Kaas. Pick a side!



Cosplay

Since you've come this far, you might as well walk the entire mile! Start off with picking a character that you'd like to emulate and dress like him/her or maybe even an it? Bonus points if you pick a species other than human. Extra bonus points if you can



repurpose your mom's favourite curtain as your robe. You could even go about ruining Princess Leia like this dude alongside. Or you could even make some character up - Darth Dandelion?

Digital life

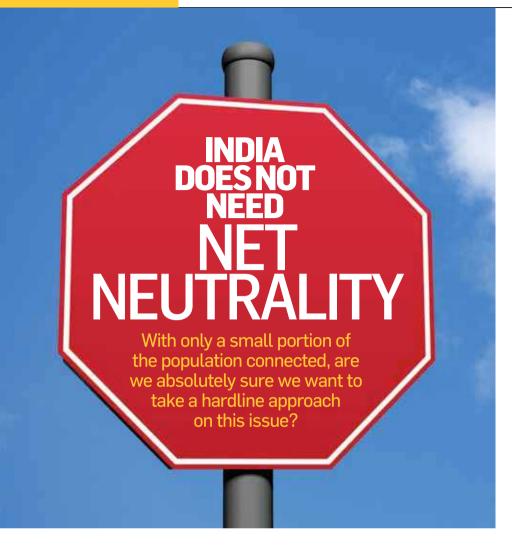
The dark side for good

Find out how whistle blowers use the darknet for affecting change in society and bringing down surveillance



Stagelight on Android!

Learn how to make music on your Android smartphone using Stagelight. Check it out: http://dgit.in/StagelightApp



Arnab Mukherjee readersletter@digit.in

ntil about a year ago, internet connectivity was just another service to us like Electricity and Cable TV which we'd come to take for granted. None of us ever gave a second thought to whether we would be able to access YouTube as easily we could access Facebook, or access Skype as easily as Whatsapp. But come December 2014, the internet was suddenly abuzz with posts, discussions, videos, interviews, all about one thing: Net neutrality.

In the past five years, the Internet has been globally subjected to a lot of debate pertaining to network neutrality and differential pricing. Countries, as contrasting as Chile and Netherlands, have adopted laws and legislation specifically aimed to keep the Internet an equal platform.

And thanks to the Internet itself, when India's turn came to face its lack of Internet specific laws it wasn't caught unawares.

Specifically initiated by Airtel and subsequently picked up by other network providers, the idea of charging for Over-The-Top services, like Skype or Whatsapp, received renewed vigour since the beginning of this year. Network providers and OTT services have been at loggerheads on this, with network providers demanding a pay-per-use billing model for these services instead of billing based on bandwidth consumed. It is often speculated that the drop in revenues from voice calls vis-àvis the growth in popularity of VOIP and drop in SMS traffic vis-à-vis chat apps is what prompted telecom operators to push for these measures. On the other hand, OTT services have demanded unregulated access to the internet without any hurdles for their growth and development. In

April 2015, Telecom Regulatory Authority of India (TRAI) proposed a separate Regulatory Framework for OTT services, beyond the standard rules that govern the internet. This violated the basic foundation principle of a neutral internet, or as popularly known, net neutrality. Or did it?

The Unbiased Principle

The principle of net neutrality dictates that data over the internet has to be treated without any bias. This means that the internet can be used for anything by anyone without experiencing additional costs or limitations. For the sake of understanding this concept let's take this example: Consider the internet to be the power supply you receive at your homes. The concept of neutrality dictates that no power supply company or technician is allowed to alter the supply in such a way that you get higher voltage when you use your washing machine than when you use your vacuum cleaner, or charge you extra money if you decide to watch TV.

The terms of watching your TV are decided between you and your cable provider alone, without interference from the power company. Similarly, the terms of an OTT service on the internet should not be under any influence from the underlying Internet provider. This is important for two reasons.

First, Suppose if Airtel provides a Viber only data pack for Rs.100 and a Hike only data pack for Rs.120. To retain its users, Hike will have to find a way to compensate users for that extra 20. And that way might come at the expense of other funds, like R&D and innovation. This reduces their ability to decide their own method of functioning to actually achieve what they set out to do with their idea or product.

Second, one of the basic things that a network provider has the technical power to do is selectively throttling or boosting the access speeds for a certain OTT service. Now, if Flipkart opens at the blink of an eye and Snapdeal keeps you perpetually waiting in a country already at the lower rungs when it comes to average internet speed, we all know which site we will shop from. This hasn't been proposed or tried in India yet, but it might be well on its way once we allow networks to interfere with



Ad-support labels

Apps on the Play store that support internal advertisements will be clearly labelled by Jan 2016 http://dgit.in/AdSprtApps



Sentiri, the smart headband

Sentiri is a proximity-sensing headband that helps steer users around by motor-driven haptic feedback on object detection: http://dgit.in/Sentiri

Feature

the basic functionality of OTT services. Certain telecom majors have been trying to push the logic that they are similar to Highway corporations in the way they function. According to them, just like Highway corporations receive tolls for maintaining the Highway, they too deserve some form of regular monetary compensation from OTT content providers. The only and perhaps the sufficient reason why that is absurd is that they already do receive regular monetary compensation for maintaining those highways of data: Internet Bills!

A company like Bharti Airtel, one of the earliest proponents of regulating OTT services, had posted a rise in profit by 30% from Data usage as per reports in April 2015. This is the same provider that tried to bring in separate internet usage plans for VoIP services in December over concerns of lost revenue.

Hence it was no surprise, that when TRAI tried to discuss Regulatory Framework for Over-the-Top Services over an open forum, it got over a million responses in spite of a short deadline. The email address releasing debacle that followed was highly unfortunate and irresponsible on the part of TRAI, but the netizens of India had made their stand on net neutrality as clear as daylight. After all, it is only because the internet is neutral that applications like Whatsapp, YouTube, and Skype could become so good at what they do. And for more of them to come by, be developed and used, OTT services have to stay unaffected.

Free Internet or the Free Internet?

Zero has always been a too-good-tobe-true number to show up on bills of any kind. So when Airtel launched the Airtel Zero platform in April 2015, the internet smelt something fishy and was up in arms in no time. The fact that it came right after the whole TRAI-OTT issue did not help its cause either.

Zero Rating is a scheme under which Mobile Network providers and ISPs do not charge the customer for data used to access certain specific websites or applications. For a developing country like ours, Internet is a very strong tool

to put growth on the fast lane. From the advent of the Internet into homes to the comparatively recent smart-phone revolution, the economy of any sector has improved due to connectivity and the easy availability of information. In spite of that, when a financially deprived citizen wants to use the internet, one of his most prominent hurdles is the cost. Facing the choice between spending money on basic necessities or the internet, it is evident why less than one fifth of the population is connected. Until the gap between the cost and the need for connectivity is bridged, it is unlikely that Internet will

Free Basics

Internet.org, Facebook CEO Mark Zuckerberg's brainchild, was launched in August 2013 with the goal of achieving a connected world. His vision was to bring basic internet connectivity to the less developed parts of the world in the form of affordable access. Similar to Airtel Zero, it is a platform centred on the idea of providing certain services like News, Weather Forecast, Messaging and more to the user without any data cost.

The intentions are clear: to get a vast majority of the Indian populace online, empowering them to achieve more. But



Noble endeavour or insidious scheme?

be used to its full potential in India. This is where Airtel decided to give it a shot.

Airtel Zero is a platform based on zero rating where Airtel customers can access certain apps or parts of apps and websites for free. The app developer or company pays for the data consumption on their app and the customer is still free to access other apps or websites by paying for the data being used to access them.

This gives the impression that Airtel is trying to create a separate island of privileged content providers who have the required bank balances to compensate Airtel's bandwidth costs. The start-ups which rely heavily on popularity for their success would now face another formidable barrier to compete with big and established competition. For obvious reasons and severe backlash, Flipkart, one of the most prominent companies to show interest in this, took a step back and exited the platform.

it is undeniable that this concept treads on the neutrality of the internet. Providing selective free access, even with the noblest of intentions, to a population of this size indicates a strong advantage for the provider. It does raise the question that if Orkut could have done the same, would we even have a Facebook today?

Launched in India in February this year, Facebook's timing was unfortunate to say the least. Even if there was any promise to be seen at the onset, it was promptly drowned in a barrage of net neutrality related accusations. The biggest point in question is Facebook's tie up with Reliance Communications providing exclusive access to the platform on their network. Any form of free access over a mobile network certainly attracts more users to the network compared to other networks which charge the users for the same services. Perhaps Facebook's initia**Feature**

Save video messages!

Skype now let's you save the video messages to play them later on Android: http://dgit.in/SkypeVdoSave



Not cool Yahoo! Not cool

Yahoo reported to block users from accessing their mail if it detects an Adblocker installed http://dgit.in/YahooAdBlock

tive does not have monetary goals, but unfortunately the same cannot be said for what Reliance stands to gain from it.

The European Solution

The Net Neutrality debate has been one with global implications. In recent times, most countries have either adopted regulations regarding the internet or are currently grappling with the same. The objective has been to achieve a solution that strikes a balance between user demands and the industry. The European Union seems to have achieved that with a Europewide net neutrality regulations standard.

will penalize any violation. Also, they have legalized the provision of better speeds to innovative services like IPTV or telesurgery on the condition that they may come only on top of the existing free internet, not as a substitute. They must use the same internet protocols as the rest of the internet. This preferential position has to be objectively necessary for the service to operate, and it should not affect the free internet.

As ingenious and encompassing as the solution may seem, it doesn't really have a possible Indian counterpart at present. With the current stage of connectivity, the network congestion issue



With less than 30% of the Indian population online, how much Net neutrality do we really need?

One of the most interesting parts of the rules they have adopted is the exceptions list to traffic management. They have set aside some situations where a network provider is allowed to perform actions like blocking, throttling, degradation or discrimination of data over the open internet. The situations are:

- If ordered by the law
- If threatened by cyber-attacks
- If network is temporarily congested

As small as they may seem, the above list of exceptions is actually exhaustive and they are well on their way to set up national level regulatory committees which in India is a much more frequent phenomenon than the exceptions in the European model can allow. The services mentioned above which require better connectivity are not a primary need for the unconnected India in the near future. However, establishing a national level regulatory body for the Internet and issues pertaining to it might just give the regulatory aspect of India's internet some much needed direction. Until that is done, we at least need to try and think of some new concepts to tackle the increasing dilemma between our need for connectivity and our right to a neutral internet.

The Unachievable Grey

We saw the differential pricing. We saw the free platforms. We had our debates and discussions on upholding and violating net neutrality. And then, along came a new concept: Data Refund.

The simplest and most accessible counterpart that can be provided to this is the cashbacks provided by online stores on the purchase of a certain product or of a certain amount. Take the example of Gigato, an android app, which rewards you with data balance for certain specific data usage. The rewards are app specific and are added to your account once the said data is consumed on that app, e.g. 10MB awarded to you for using 10MB of your mobile data on Whatsapp.

So does this violate net neutrality or not? That is more complicated a question than it appears. Although it does favour apps which can pay Gigato for the data reward, it does not set any restrictions on how that data can be used. So basically, you, as a user, are encouraged to spend more data in any way you see fit.

The way Gigato achieves this is by rewarding you a total data balance once you have achieved a certain total target MBs of rewards spread across a number of apps. This assures that they provide app downloads and usage to their partners, while providing free unregulated data to their users. A win-win for all.

The Data-vu

Interestingly, we came across Gigato in from two vectors recently. One was through an interview with their CEO (page 126) and next in a strongly worded letter drafted by the Save The Internet collective to Mark Zuckerberg after his IIT Delhi townhall address. It was cited as an example of how Facebook can realise its vision without creating barriers. What's interesting is that it made us at least mull over our stance on net neutrality (if not question it outright).

If properly analysed, the similarities between Gigato and Airtel Zero are unmistakable. What differs is only that the data is received in the form of a reward from Gigato, whereas by using Airtel Zero you save more of your data balance. An average person, without a zero rated



Robot takeover

Is your job at risk? Check out these robots taking over humans at work: http://dgit.in/RoboTakeovr



Get paid to walk!

Ever thought if you could get paid for walking? Checkout Bitwalking, an app that does exactly that! http://dgit.in/Bitwalking

Feature

platform, still has to pay the same price for usable data as the rest of the population to access the entire internet. Now, if some of the things he accesses become free of cost, he just pays a lesser amount to access the same internet. It need not be retold how this benefits the low income class of India. The two ideologies of net neutrality and the speedy adoption of internet cannot practically go hand in hand. If the private sector is to be entrusted with the noble endeavour of getting online the 700 million strong still unconnected populace certain innovative measures that don't outright violate network neutrality have to be adopted. Similarly, Facebook's Internet.org achieves efficient price discrimination, not quite unlike Satellite TV operators providing channel packs at lower costs based on what the user watches.

Coming to the technical side of Zero rating, it has been established by observation and several studies that the quality of a network increases with an increase in the number of users. To continue with the Highway example, ask yourself where should you build a six-lane highway: a road actually suffering congestion or somewhere desolate where it might not be utilized fully?

Numbers are good, so is competition

The Internet is a two sided market. A greater number of users encourage content providers and app developers to expand and reinvent their services. Simultaneously, a diverse and expansive range of content which is easier to access attracts more subscribers to the internet. In short, the more the netizens, the more the variety of content available.

Along with that massive usage, something like Internet.org will also create a healthy competition between networks, where the end user stands to gain. This ultimately reinforces the belief that some internet is better than no internet.

The Golden rule of Internet: Think before you speak, or be trolled

Violation of net neutrality is not acceptable in any form and its opposition to any extent possible is justified. The part where such an opposition becomes harmful is when it relies on misinformation and herd mentality to reach a decision without really getting to know the essence of the matter.

We have rightfully opposed Face-book and Airtel for their misguided endeavours, considering that they are both massive corporations who cannot assure us that their 'free' services won't turn into monopolies and bite us back in near future. But what is also true, is that instead of being told what they are trying to achieve by the advocates of one side, perhaps we should consider both the sides, find a balance and then make a decision.

Or maybe we'd rather get trolled.



Feature



Get your Zolt now!

Seen at CES this year, Zolt is the smallest charger for laptop and is shipping for \$100! http://dgit.in/ZoltChrgr



Sending an email to US

Be cautious while sending an Email to US, you never know who is logging it. http://dgit.in/SpyNation

RGOOD

How the deep web fosters anonymity and privacy

Dhinoj Dings readersletters@digit.in

here is little doubt that whistle blowers have had a significant impact on politics, economy and business. People like Edward Snowden and Julian Assange have demonstrated how whistle-blowers can change public opinion and hold governments to account for their shenanigans and wrong doings. But the rockstar

being maligned and sued, to being jailed or physically eliminated. After all, you can scarcely expect the powerful to sit by idly when hitherto secret information is revealed to the world.

Thankfully, technology is helping many modern whistleblowers to publish their stories without revealing their identity. Even sites like Wikileaks wouldn't exist without secret networks that exist beneath the public Internet. And these hidden or underground

But this certainly is



This is probably not what a whistle blower looks like

aura that has been bestowed on some whistle blowers should not blind us to the risks that they have taken to bring sensitive and secret information to light.

That's because whistleblowing involves pointing fingers at someone or some organization that's powerful.

Whistleblowers are a breed apart, and they are often the source for shocking exposes that open the world's eves to a hitherto unknown facet about a renowned individual, a company or a nation. And the repercussions for whistleblowers could be dire - from

networks, collectively called the Deep Web or Darknet, owe their existence to services like TOR that provide a secure communication environment and ensure user anonymity.

One example of service that helps whistleblowers is Dead Man Zero. This site gives whistleblowers the option to have their information automatically published if they get kidnapped, jailed, injured or worse. The site is accessed using the Tor browser, and all you need to do is to upload your sensitive files into a cloud storage service. The files

can be encrypted with a password, and you can also include a description of your content. The site then adds its own encryption to the files, making them extra-secure. Afterwards, you get a unique URL using which you can log in. While uploading the files, you can specify a time period (once every day, once a week or once every month). If you do not log into the site within that time period, your files will automatically be sent to a list of email addresses that you



Dead man zero: The Whistleblower's insurance policy

have provided in advance-allowing you to disseminate the information.

The Deep Web

You may be astonished to know that there is a vast amount of information that is not "indexed" and served up in search results by popular search engines like Google, Bing or Yahoo. These sources collectively comprise the Deep Web, and can include all kinds of places-from academic databases to private websites and corporate portals. Very often these sources are hidden



PS2 games on PS4

Good news for all the PS4 owners, you can now play all PS2, read on to find out how. http://dgit.in/PS2Emulated



New French Law

In the light of recent terrorist attacks France introduces new censorship laws. http://dgit.in/FrenchLaw

Feature



The web that we know is probably just the tip of the iceberg

from search engines for reasons of privacy and security. It is estimated by researchers that the Deep Web is so large that that less than 1 percent is accessible using traditional search engines since the content is stored in file formats that search engines cannot generally deal with, or can be accessed only by dynamic database queries.

Darknets, on the other hand, are specific private niches in the Deep Web that are intended to for access by trusted users. They usually require highly specialized software or tools that enable access, decode the encrypted formats, and ensure user anonymity.

Getting Inside the Darknet

Making your way into the Darknet is virtually impossible, unless you have the right tools and use the proper techniques. But once you have them, you can use many directory sites and wikis that have been created to keep track of hidden services. For instance, to access Onionland, you need to install special software, and take some safety precautions.

Once you access Onionland, you will see that it looks much like a directory listing. Hidden services turn up and vanish, often within days—and new entries crop up periodically. And it's not uncommon for the directory itself to shift URLs so that for tracking the locations, you will have to rely on Onionland itself.

Most of the directory entries you will find in Onionland make it amply clear what lies beneath. For this is the market place for weapons dealers, credit-card scammers, document and currency

GETTING INTO THE DARKNET

To access the Darknet you need special software and services. Here are some you can use:



TOR Browser

Initially developed by the US Navy as a global network of servers, TOR (short

for The Onion Router) helps you browse the internet without revealing your identity. The browser keeps switching your traffic through a relay network so that it's hard to pin down your location.



I2P Browser

Allowing you to set up peer-to-peer connection in anonymous mode, the I2P

is promoted as an alternative to TOR. It employs P2P software called the I2P layer, and this browser is meant for communicating secrets.



Tails₀S

The Amnesic Incognito Live System (Tails) is

a Linux distribution and a TOR operating system that aims to provide more stringent user anonymity. Tails can be booted from a USB drive, or a DVD, and does not leave any traces on your machine.



Orbot

A tool for Android smartphones that provides anonymity

routing traffic from the web browser through the TOR network.



Tox

Tox is a free and open-source, peerto-peer, encrypted instant messaging and video calling software. Using Tox

you can message friends, join chat rooms, voice and video chat, and send each other files in a secure manner. All traffic over Tox is encrypted end-to-end.



IprediaOS

Another OS based on the Linux platform, Ipredia

offers a secure environment for users who want to use the Net anonymously. The traffic is automatically encrypted, and the OS provides a wide variety of applications for chatting, peer-to-peer communications, mail and file transfers.

A SANER SIDE OF DARKNET

In an increasingly connected world, privacy is becoming a major concern. Virtually all content that you create or share online is amenable to the prying eyes of ad networks, government organizations, and spy agencies. Needless to say, this scenario makes many web-users uncomfortable. Indeed, there are many who are seeking an alternative version of the Internet that is inaccessible to scanners. And the curious part is that these users do not want a private version of the Net for nefarious or illegal activities.

Hyperboria, the brain-child of programmer Caleb James, is is a

highly-encrypted network of people connected to each other in a peer-to-peer mode. The cryptographic technology has been designed with the assistance of several mathematicians, and claimed to be virtually unbreakable. But the catch is that you need an existing Hyperboria user to connect to—limiting the spread of the technology.

But that's not to say that Hyperboria isn't a happening place. Aside from The Twitter like Social-node, Hyperboria is also rich with such things as Uppit—a Reddit powered voting/sharing service.

Feature

Here is an instance defying the notion that brain growth stops after adulthood. Read on to find out. http://dgit.in/DiffPerson



RAW vs JPEG

Reuters banned the submission of RAW format photos to ensure the reality of the images taken. http://dgit.in/NoRAWPics

IS THERE A HIDDEN DEEP WEB?

Now that the Deep Web has surfaced in public discussions, the biggest question is how many levels does the Internet have? Well, if you have to get at the truth, then you need to dig deep. And here is what experts have found

- A. Layer 1: This is the one we are all familiar with, and use everyday. The links are decisively Internet-facing and access is easily possible with popular browsers.
- B. Layer 2: Below the primary layer a multitude of Internet-facing links exist, though they are unlisted. The major mode of accessing these links is through enforced anonymity.
- C. Layer 3: This is huge agglomeration of links that aren't Internet-facing. Most of the content in this layer isn't accessible to the casual user, and access methods include using physical networked devices or specialized software.
- D. Layer 4: This layer involves smaller networks, none of which is Internet-facing. Usually, the highly protected content of this layer can only be accessed via security flaws.

Depending on who you ask, the number of layers and the contents thereof could vary. But, It has often been speculated that that there are hidden areas within the DeepWeb that are accessible only to a select few.

1. Marianas Web

While there is no proof, belief has it that the Marianas Web is a repository of all secrets



that humans have pondered about for long time-including the actual location of the lost city of Atlantis and the Vatican secret archives. But that's not all. Some conspiracy theorists claim that the Marianas Web is an AI (Artificial Intelligence) that has become sentient, and now controls the whole

Internet. According to the proponents of this view, you need quantum computers to access Marianas Web.

2. Freenet

Unlike Marianas Web, Freenet isn't a myth. It's a platform that allows you to communicate anonymously. Aimed at aiding those who wish to beat surveillance and use the internet



for publishing information without revealing their identity, Freenet has been around for about 15 years and is quite popular among whistleblowers. But a few allege that Freenet helps you gain access to the darker parts of the web, and dabble in shady activities in complete annonymity.

forgers, pornography - and plenty of other stuff you wouldn't feel comfortable discussing with your mother. Be warned that Onionland also has its own share of scams-all designed to make you part with your hard-earned money. Onionland, with its perennially shifting links and directory entries, is characteristic of how many Darknets function.

Deep Web is more of a **Temporary Haven**

It's alarming to think that so many products and services that we rely on are controlled by a few powerful organizations, including the government. The common man has put quite a lot of trust in these organizations. Unfortunately, these mammoth entities exert a high

level of control over most mainstream media. So, when a malpractice arises, it is more than likely that it will go unreported. This volatile situation has made whistleblowers extremely crucial for the world at large-and has rendered them highly vulnerable to punitive action.

While whistleblowers have found a way to protect themselves by making use of the Deep Web and other anonymity-providing services, in the long run it is not feasible to rely solely on the Deep Web for protection. Given the rate of evolution of technology, surveillance agencies will eventually breach them. What we need are stringent rules and laws to protect those who risk everything to divulge a significant piece of information-and strong enforcement. New initiatives like the Whistleblowing International Network (collective of NGOs for whistleblowers) that strives for better protection for the secret-breakers need to be encouraged and supported. [1]



Hidden Wiki: considered the front page of Onionland

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CROWNING THE YEAR'S ULTIMATE PERFORMERS

ecember is exciting for two special reasons for all of us here at Team Digit and the Test Centre. We can't seem to decide as to what we're looking forward to the most – watching the events of a galaxy far, far away or seeing the reception to our Zerol Awards from all you readers. The anxiety is unbearable!

The force was strong this year at Digit's Test Centre where we welcomed just under 600 products in our Mumbai and Noida locations, improving upon our 2014's tally of about 488 products. Just for those who're curious, that dials down to about 60 products being unboxed, tested, reviewed and compared both in print and online, each month.

Why do we do what we do? Well for starters we get to play with some of the craziest products you can think of. This year we got a levitating speaker, a robot vacuum cleaner and even a lambhorgini branded phone costing ₹4 lacs. But the more significant reason why we do this is because we all deserve the best products, especially when picking the right one can be so darn difficult, and we experience that every single day by engaging with our readers who reach out to us over email, forum posts, Facebook, Twitter and Google Plus - all looking for technology buying advice. That's not only satisfying but it also makes us acutely aware of the trust placed by countless buyers and our responsibility to give them the best possible buying advice. To that effect, the Digit Test Centre proceeds with a single-minded goal of giving our readers the best knowledge about the latest and greatest products that have launched in the Indian market. That's always been our aim while reviewing and writing about any product that's printed in Digit's Tried and Tested section pages or online, and it will continue to remain our focus as long as there are products to review in the market.

With that in mind, let's outline the significance of this story and the iconic trophy you see on the page alongside. Zerol Awards are fundamentally different from all other awards that we hand out on a monthly basis in our comparison tests. Unlike Best Buy and Editor's Pick Awards, Zerol Awards focuses solely on the performance of a product – where the price, design and features of a product don't matter at all. It's similar to a Best Performer Award but more exclusive as Zerol Awards take place only once a year.

The product categories for Zerol Award are carefully picked to ensure we have reviewed enough products in any given category to speak authoritatively about it, subsequently zeroing in on the pick of the bunch. We also summarise the highs and lows of a Zerol Award product category in the introduction

of their respective pages, trying to give our readers an idea of what transpired in that product category throughout the year, and predict future trends (if any). And although performance really is king in this Award's category, we have also highlighted the Best Buy product in each category for the first time. This is to ensure that with this one issue of Digit, you're armed with enough knowledge to be able to buy the best product you possibly can in the categories we've covered.

Many thanks to all the brand representatives who continue to support us with products, month after month, year after year. Winners of Zero1 Awards should rightfully rejoice, whereas products that fell just short of the finish line shouldn't be disappointed – they're great performing products, too. They have to be awesome otherwise we wouldn't mention them here.

At last, after a rather hectic month of testing – not to mention blood, sweat, tears, and sleepless nights – the Digit Team is proud to announce the winners of the Zerol Awards 2015. These are the best performing products that have entered our hallowed halls and will serve as benchmarks for future challengers to emerge.

- Jayesh Shinde

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Smartphone - Premium





Samsung Galaxy Note 5 Price: ₹53.900





Huawei Nexus 6P Price: ₹39,999

hat do you look for in a premium smartphone? To put it very simply, the answer is performance. If you're going to spend 40k+ on a smartphone, you want it to compromise on nothing. You want it to run every game like no other, and have a camera that can make all your photos look good. A premium phone is the absolute high end in the market and let's see which device wins our performance crown.

Zero1 Winner

Apple iPhone 65 Plus

The iPhone 6S Plus may not be a major upgrade over its predecessor, but it won this battle fair and square. The phone has a top of the line camera that edges out the Galaxy Note 5 by just a little bit. Apple's camera is better for the fact that it can create more true-to-source images. The camera isn't the only reason for the iPhone's victory this year, though. The A9 processor beats every other Android device in terms of performance. As close as the next best device in this category is, when you take graphics into account, Apple is still miles ahead. In fact, the Cupertino based technology giant's vertical integration between hardware and software is what won it the title this year.

On a pure graphics test, like the GFX Bench Manhattan test, the iPhone 6S Plus scores over 2300, while the nearest competitor lies at less than 1000. Similar results are seen on the 3D Mark Unlimited test, which is a more system centric graphics test. In addition, despite its dual-core processor, the iPhone 6S Plus is right up there when it comes to single and multi-core performance as well.

Simply put, the iPhone 6S Plus is the best performing smartphone of 2015.

Second place

Samsung Galaxy Note 5

The Samsung Galaxy Note 5 lost out on the top prize by just a bit this year. Yet, the phone helped Samsung record a profit growth for the first time in four quarters, and there's a reason for that. Second only to the iPhone 6S Plus, the Galaxy Note 5 is arguably the best Android phablet that you can buy today. It has a top class 5.7 inch SAMOLED QHD display and runs on Samsung's own Exynos 7 Octa processor.

Amongst all the processor that ran on Android phones this year, the Exynos was by far the best. It churns out as much performance as possible and while it is behind the iPhone in graphics performance, the

single and multi-core tests are comparable to say the least. In fact, the competition is so close that you can actually choose based on the OS here. Samsung has done a good job, and the only real difference maker is Apple's vertical integration.

If you're looking for the best performing Android phone to buy, then the Galaxy Note 5 is the one you need to go for. It scores a whopping 69326 on the AnTuTu benchmark, while Geekbench 3's single and multi-core tests come out at 1398 and 4457 respectively. On the GFX Bench Manhattan test, the phone scores 931, which is best amongst Android devices today.

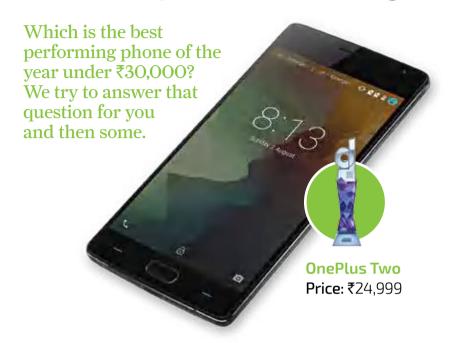
Best Buy

Huawei Nexus 6P

Android Marshmallow combined with top of the line performance makes the Nexus 6P the best premium smartphone to buy right now. In fact, it is perhaps the first truly premium Nexus phone, combining a metal build with a really good camera and the newest generation of the Snapdragon 810 processor from Qualcomm.

It comes with 32GB of internal storage, along with a 13MP rear camera, 3GB of RAM and a 5.7 inch QHD display. Amongst Android smartphones, it's second only to the Galaxy Note 5.

Smartphone - High-end





Honor 7
Price: ₹22,999



Motorola Moto X Style/ Nexus 5X

Price: ₹29,999 / ₹24,490

ver the past year, smartphones priced between 20to 30k have classified themselves as flagship killers and why not! If you are looking for the best performing smartphone under 30k, then you need not look beyond this list for 2015. We have reviewed virtually every smartphone launched in this calendar year to bring you the crème de la crème.

Zero1 Winner

OnePlus Two

The OnePlus Two may not have received the standing ovation its predecessor received but that's because expectations were set really high. Speaking of raw performance, it has the best benchmark scores in its class. In the 3D Mark Unlimited the smartphone scored 18423 where as in the GFX Bench Manhattan on-screen it scored 1351. In Geekbench multi-core it scored 3908. So when it comes to raw horsepower required for something as simple as checking your e-mail or power hungry tasks like running the latest game on a smartphone, the OnePlus Two can handle these tasks with ease. Sticking with the theme of performance, the 13MP rear camera not only clicks great pictures but can also record video in 4K.

Second Place

Honor 7

If you are looking for a smartphone with great build, stellar performance and a fingerprint sensor that works smooth as silk, then the Honor 7 is your weapon of choice. When it comes to benchmark performance, the device lags behind the One-Plus Two considerably. In the 3D Mark Unlimited the smartphone scored 11302 where as in the GFXBench Manhattan on-screen it scored 449. In Geekbench multi-core it scored 3315.

The smartphone has an all aluminum build making it heavy as well as sturdy and that's a good thing. The 3100mAh battery has the ability to last through one day of heavy use. The rear 20MP camera takes some great pictures.

Third Place

Motorola Moto X Style/Nexus 5X

It's a tie. Kicking things off with the Moto X Style, the smartphone has a 5.7-inch display with a 1440x2560 pixel resolution. The three areas where the smartphone excels are with its stock Android experience, great build and a good camera. Coming to the performance scores of the Moto X Style in Geekbench 3 Multi-Core it scored 3573 where as in GFX Bench



Manhattan Onscreen it scored 576.1 and 3D Mark Unlimited it scored 19745.

Nexus 5X

The Nexus 5X on the other hand caters to the audience that doesn't want a smartphone with a really large display. Just like the Moto X Style, the smartphone is powered by the Snapdragon 808 chipset but has 2GB RAM. Even though the Nexus 5X doesn't have the best camera out there, it is comparable to flagship devices and that is saying something. The 12.3MP camera takes some impressive pictures in low light. It has a 2700mAh battery which is enough considering the package on offer. If you can't wait for OS updates, then the Nexus 5X is your weapon of choice.

Best buy OnePlus Two

All things considered, the OP2 offers the best bang for your buck. Period. \blacksquare

Smartphone - Mid-ranged

So what if you don't have the money to buy a premium or highend smartphone? ₹20k is enough money these days, with these stars! **Asus Zenfone 2** ZE551ML



Meizu MX5 Price: ₹19,999





Motorola Moto X Play Price: ₹18.499

f you are buying a smartphone today in India, chances are you are buying something from the mid range category. This category which spans from ₹10,000 to ₹20,000 offers some of the best well rounded smartphones you can buy today, sporting of flagship specs, 1080p displays and improved camera performance. Here are our pick for the two top performing phones in the category.

Price: ₹19.999

Zero1 Winner

Asus Zenfone 2 ZE551ML

No matter how many jokes people may crack on the number of Zenfones available in the market, fact is, they are bloody good phones. Asus, which made its way last year with the Zenfone 5 in the smartphone category got a great reception and the company reciprocated that, this year, with the Zenfone 2. This phone range, and this phone in particular gave the company a firm grip over the mid-range category making it our choice for the best phone in the ₹10,000 to ₹20,000 category.

The Asus Zenfone 2 can be seen as "THE" phone which started the trend of bringing flagship class hardware to the mass consumed mid-range. Offering 4GB of RAM, 32GB of storage and powered by

a quad-core Intel processor, this phone is not just good on paper but a real performance monger. Touching almost 46,500 points in Antutu synthetic benchmarks, the Zenfone 2 falls just short from offering a flagship class performance. That said, it is quite an achievement in itself. Adding to it, the tried and tested design, gives the phone a very sturdy build which can be relied upon to soak up those accidental bumps.

Second Place

Meizu MX5

Meizu came to India this year with three new phones and all three were simply superb in their respective categories. The MX5 which is the current flagship smartphone in India for the company can easily be endorsed as the most affordable flagship phone you can buy. Meizu MX5 comes with quite a resume featuring Mediatek's best SoC - Helio X10, a full metal unibody construction and a 20MP camera to say the least. In the performance department, it is slightly slower than our winner but it comes with a better display. However, since this is Meizu, which is a Chinese smartphone company, a custom UI is somewhat, a mandatory affair on top of Android.

And, while the UI is quite user friendly, it does come with a small learning curve. So, once you get accustomed to the 'home' cum 'back' cum 'fingerprint sensor' button and figure out the gesture to call the multitask window, you will be able to appreciate Meizu's MX5.

Best Buy

Motorola Moto X Play

Moto X Play is the obvious choice if you want a no nonsense smartphone in the mid-range category. From the past two generations Moto X range of phones have been about the best phone Motorola has to offer, which meant leaving a considerable gap between the Moto G and the X. Now though, Motorola has dealt with the problem by offering the Moto X Play. The Play is not the fastest mid-range phone out there, nonetheless, the Qualcomm Snapdragon 615 is still a very capable SoC for most usage scenarios.

Starting from the new and much improved 21MP rear camera, which is one of the best cameras we have seen on a midranged smartphone. Adding to it, the large 3630 mAh battery will be able to last you a day, any day, without asking for a quick recharge. However, the cherry on the cake is the UI experience.

Smartphone – Budget category





YU Yureka Plus Price: ₹8,999



Lenovo K3 Note Price: ₹9,499

one are the days when buying a phone from the budget category meant compromising on basic features. Today, the budget smartphone category is filled with smartphones which can handle almost any task or app you throw at them. The sub-10K smartphone segment has become the battleground for all kinds of small and big brands and the hostility is widely justified.

In this segment which is highly restrained by a budget cap of ₹10,000, most smartphones fair well in some areas and lose out in others. Here are the best performing phones you can buy in the budget rang.:

Zero1 Winner

Meziu M2 Note

Meizu M2 Note is the jack of all trades in the sub-10K budget smartphone category. Unlike most phones in the category which strive in one or two aspects, the M2 Note shines in all of them. The phone comes with a Mediatek MT6753 octa-core processor which is more than capable of handling day to day tasks and even more, if required. While it is a popular SoC in the price segment, Meizu has highly optimised it for the M2 Note. It consistently performs well with next to no lag.

It houses a 5.5-inch IGZO LCD display which is undoubtedly the best display in

the segment. Colours appear natural and the viewing angles are so good that the smartphone can be used as a benchmark. The camera is good, too, and images taken offer accurate details in almost all lighting conditions. Like all Meizu phones, there is a slight learning curve to the UI (Flyme OS) but once you pass that, the phone won't give you a reason to complain.

Second

YU Yureka Plus

Powered by the Qualcomm Snapdragon 615 SoC, performance wise it is one of the best phones in the budget segment. The Yu Yureka Plus' new 1080p display is a good upgrade from the original Yu Yureka which offered only a 720p display. It offers improved viewing angles and better colour reproduction.

For all you shutterbugs out there, the 13MP Sony camera on this smartphone does a decent job when it comes to taking pictures but falls short of quality achieved by the Meizu M2 Note or the Asus Zenfone 2 Laser. Moreover, it comes preloaded with the highly popular CyanogenMod ROM. This gives the phones a very stock-Android like experience and adds a bunch of software tricks as well.

Third

Lenovo K3 Note

Lenovo's K3 Note has all the components





Meizu M2 Note Price: ₹9.999

to make it a very good smartphone but in falters when it is pushed beyond its comfort zone. The thing is, day to day performance is quite good but when it comes to heavy gaming, the phone runs out of steam. Nonetheless, it is still a very good phone and that is why we recommend the Lenovo K3 Note. Powered by an octa-core processor, the K3 Note is a champ in the synthetic benchmarks. The big display is great if you wish to view a lot of video.

Best Buy

Meizu M2 Note

Meizu is still a young brand but we won't hesitate to recommend it. The M2 Note is a brilliant offering from the company which offers a consistent performance across all quantifiable aspects making it the best option available in the sub-10k segment. To top it all, it is available without any registrations or flash sales.



Smartphone - Android





Huawei Nexus 6P Price: ₹39,999





espite all of Apple's profits, Android still owns more than 80 percent of the market share worldwide. So, if you're a smartphone buyer, chances are that you're buying an Android smartphone. But how do you choose? Which is the best Android phone today? There are simply too many in the market and it could take a pretty good amount of time to choose. The trick is to focus on exactly what you need from your smartphone.

Over the past year, Android phones have come dangerously close to delivering the performance that iPhones do and OEMs have upped the tempo with their efforts to sell. The Indian market is amongst the most important in the world now, which also means phones launch faster and it's easy to get your hands on the best out there.

Zero1 Winner

Samsung Galaxy Note 5

If you're looking for the best Android phone that money can buy, then Samsung's Galaxy Note 5 is all you need. How did this phone make it above the Nexus devices of the world? Simple, Exynos and camera.

While the 16 MP camera on the Galaxy Note 5 can easily give the iPhone 6S Plus a run for its money, the Exynos 7 Octa processor is better than all the Snapdragons and Helios running in the market right now. The Galaxy Note 5 combines its 65k plus AnTuTu score with amazing scores on all other benchmarks as well. The Galaxy Note 5 is the best Android phone in the market. Period.

Second

Huawei Nexus 6P

Do you know what Nexus phones have always lacked? It's a good camera. Well, the Nexus 6P deals with that and keeps all the goodness of past Nexus phones alive as well. It is the first Nexus phone to sport a full metal design and the 12.3MP camera on the back is amongst the best in the market. In fact, the Nexus 6P's camera is better than the iPhone 6S, which is saying something for a Nexus phone.

As far as performance is concerned, the Snapdragon 810 has been tamed, meaning there are no heating issues and amongst Android phones, its performance is as close to the Galaxy Note 5 as possible. If it's stock Android goodness that you want, then the Nexus 6P is as good as it gets.

While we can't call it the best Android phone out there, the difference between

the Nexus 6P and Galaxy Note 5 will be apparent only after a side-by-side comparison in many cases. It looks good, feels good and performs like a boss!

Best Buy

OnePlus 2 or Honor 7

The OnePlus 2 and Honor 7 are your quintessential mid-ranged flagship devices. While the former is the perfect fit for big screen lovers, the latter would suit those who want a more compact form factor.

Both the phones are very good performers. The OnePlus 2 was amongst the first phones to deal with the Snapdragon 810's heating issues, while the Honor 7 comes with Huawei's own Kirin 935 SoC. They are pretty much the same in terms of single and muti-core performance, but the OnePlus 2 is slightly better when it comes to the GPU performance. Still, the difference would be seen only by the most hardcore gamer, while those playing Temple Run can enjoy any, based on their preference of screen size.

The cameras on both these phones are top class, with little to separate them from each other. While the Honor 7 has 3GB of RAM, the OnePlus 2 has 4GB, which again is something that'll matter to the power users only.

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Smartphone - Camera

More people are purchasing smartphones based on their camera prowess. We list 2015's best camera phones. Sav cheese!

martphone cameras are no longer casual throw-ins on calling devices. With every significant new launch, smartphone cameras have evolved into fully functioning photography modules capable of replacing the average pointand-shoot cameras, bringing in manual settings, gradually improving image sensors, and a lot of innovation with even the front-facing camera modules (owing to the advent of 'selfies').

In such times, it was inevitable to choose Smartphone Cameras as an entirely individual segment yet again. The phones that will receive the award were judged based on how true-tosource were the images rendered by the cameras, how smooth and efficient were the noise reduction algorithms, how much control would you have over a photograph, and the overall versatility of the primary camera module.

Zero1 Winner

iPhone 6s Plus

Apple's prima donna was among the very first in packing in excellent camera modules within the compact shell of smartphones, and this year, the prime award goes to the iPhone 6s Plus - the largest and the most expensive that an iPhone has ever been. There has never been any doubt over an iPhone's imaging capabilities, and with the iPhone 6s Plus, the status has been reaffirmed.

The iPhone 6s Plus packs in a Sony IMX315 image sensor, with a resolution of 11.94 megapixels for still images, and 4K video recording capabilities. It also featured a 5-element lens with a Hybrid IR filter, and Sapphire crystal glass lens



cover to protect the lens. The Sony IMX315 image sensor is a part of Sony's latest line of mobile imaging sensors, that replaces the second green pixel in the sensor's pixel array (the previous standard pixel array was RGBG) with a white pixel. This allows for better light reception, thereby allowing a brighter lit image with lesser noise levels and superior low light photography. The iPhone 6s Plus' camera also features optical image stabilisation, making it an ideal camera module in the present generation of smartphone cameras. It shoots crisp, detailed images, retaining true-to-source colours and matching the level of details of a reasonably decent standalone point-and-shoot camera. For its stellar camera, the iPhone 6s Plus is our deserving Zero1 Winner!

Runner-ups

Samsung Galaxy Note 5 and Sony Xperia Z5

The Samsung Galaxy Note 5 is a formidable overall device, and is powered by two different sensors depending on its market - either a Sony IMX240, or a Samsung S5K2P2 ISOCELL image sensor, both with resolutions of 15.87 million effective pixels.





Samsung Galaxy Note 5 and Sony Xperia Z5

Price: ₹53,900 / ₹45,490





Honor 7

Price: ₹22,999

Also featuring optical image stabilisation and an f/1.9 aperture lens to aid wider depth of field, the Samsung Galaxy Note 5 comes mighty close to the iPhone 6s Plus, with the level of detail and clarity in its photographs. Where it loses out on is the slight oversaturation of colours and extreme low light, where the iPhone triumphs over it.

The Sony Xperia Z5 comes third, powered by a 22.78MP Exmor RS mobile image sensor. While theoretically, this is one of the most powerful image sensors, Sony's implementation and algorithms have resulted in generally oversaturated colours with slower focusing than the iPhone 6s Plus and the Samsung Galaxy Note 5, and even lesser amount of detail. Nevertheless, once you manually tweak the settings and get it right, the Sony Xperia Z5 is absolutely delightful.

Best Buy

Honor 7

The Honor 7 features a Sony IMX230 BSI sensor, with a resolution of 20 megapixels and an f/2.0 lens. The phase-detection autofocus is fast, and the 6-element lens is very, very good. Taking into consideration a price of ₹22,999, and the Honor 7 makes for flagship-class smartphone photography at a mid-range price bracket.



Laptops - Gaming





HP Omen 15-5116tx Price: ₹1,59,990





Acer Aspire
V15 Nitro
Price: ₹1,10,000

his year, too, gaming laptops have continued to mop the floor with some of the other category laptop candidates, underlining just how powerful they can be if you do choose to splurge on buying one of these performance behemoths. We saw the industry rapidly shifting towards adopting SSD storage, while the prevalence of Intel's latest 6th gen Skylake CPUs hasn't really gotten underway. NVIDIA continues to lead AMD as the preferred graphics solutions provider among almost all gaming laptops manufacturers. Another trend we saw is the emergence of thin gaming laptops which gave heavy, chunkier rigs a decent run for their money.

Zero1 Winner MSI GT72 6QD

This machine is the undisputed king among all gaming laptops we've tested this year and also its competitors available in the market. Weighing in at 3.8 kg, it's no ultrabook, but who cares? Just take a look at its specs – 17.3-inch Full HD display with NVIDIA GSync, powerful quad-core Intel Core i7-6700HQ processor clocked at 2.6 GHz (it can reach up to 3.5 GHz), 16GB DDR4 RAM clocked at 2133 MHz, 1TB 7200RPM hard drive and discrete NVIDIA GeForce GTX 970M graphics with 3GB GDDR5 memory. With a PC

Mark score of 5465, 3D Mark (Fire Strike Ultra) score of 1673, offers unmatched CPU-GPU performance that simply blows away its nearest competition. What's even great about the GT72 6QD is the fact that it stays relatively cool at 42C even at full load and offers a respectable battery life of 147 minutes in our tests. We had absolutely no trouble playing the latest and greatest games on this laptop as it accommodated all of them fairly well with no lag or stutter. What's more, its onboard Dynaudio speakers are probably the best we've heard on a laptop, providing very good audio performance as far as laptops go.

Second

HP Omen 15-5116tx

What's great about HP Omen 15 is not only the fact that it has very good internal hardware, but it manages to deliver a level of superlative performance while keeping its form factor unbelievably slim and lightweight – a 15-inch machine weighing just a hint over 2 kg and giving the best performing laptop in the country a run for its money is a testimony to HP industrial design team. The HP Omen 15 packs in a PCIe SSD giving it a massive boost over traditional SATA drives, and it also has an Intel Core i7-4720HQ chip, 8GB DDR3 RAM, and NVIDIA GeForce GTX 960M graphics with 4GB GDDR5

memory. In terms of pure numbers, with a PC Mark and 3D Mark score of 4496 and 967, respectively, the HP Omen trails only the MSI laptop in terms of pure performance. It's the second best performing gaming laptop that money can buy in India right now.

Third

Acer Aspire V15 Nitro

Close on the heels of the HP Omen 15 is Acer's Aspire V15 Nitro Black Edition gaming notebook – out of 100 on our performance chart, it received 81, whereas HP and MSI received 85 and 96, respectively. Scoring 3704 and 961, respectively, on the PC Mark and 3D Mark scale proves that the Aspire V15 Nitro is right up there among the best of the best when it comes to raw performance and gaming proficiency. It's also the only gaming laptop we tested this year which supports 4K UHD (3840x2160) screen resolution.

Best Buy

Acer Aspire V15 Nitro

The 15-inch gaming thunderbolt from Acer Aspire V15 Nitro Black Edition wins the Best Buy Award fair and square simply because it offers close to 75-80% of the MSI GT72 6QD's performance at nearly half the cost. Music to any gamer's ears desiring great bang for their buck.

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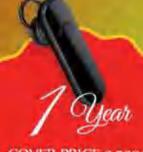


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Laptops - Mainstream

True all-rounders of the laptop world that don't cost a bomb





HP Envy 14-i008TX Price: ₹86,990



Acer Aspire E15

Price: ₹68,499

riced under 1 lakh, as a category mainstream laptops sits just a cut below the mind numbing performance capabilities of gaming laptops. They're laptops capable of doing everything - work, game and play - and they're extremely good in all three facets of their intended usage. Think of them as all-rounders of the laptop world and you wouldn't be far away from the mark. We didn't see any truly path-breaking trend emerging specific to mainstream laptops this year. Just the same shift to a newer

hardware platform, adoption of SSD storage, better wireless connectivity, etc.

Zero1 Winner

Lenovo IdeaPad Y50-70

It looks like Lenovo didn't want to change the essence of its winning formula, as the Y50-70 continues to be a worthy successor to the 2014 edition of IdeaPad Y50-70, which was also the Zero1 Award winner in this very category last year. The 2015 edition of Lenovo's IdeaPad Y50-70 comes with a power-packed hardware arsenal - 15-inch Full HD screen, quad-core Intel Core i7-4710HQ processor clocked at 2.5 GHz (with room to go up to 3.5 GHz), 8GB DDR3 RAM and 1TB HDD + 8GB SSD hybrid storage. What's changed from last year is the addition of NVIDIA GeForce GTX 960M graphics with 4GB GDDR5

memory as opposed to GTX 860M as seen in 2014. And that makes a big difference in the machine's overall performance, elevating its 3D gaming prowess in the same league as the HP Omen 15 and Acer Aspire V15 Nitro - a noteworthy achievement. Not only can you game on the IdeaPad Y50-70, watching movies and videos is a treat thanks to its audio-visual experience which is enhanced by built-in JBL audio speakers that offer best in class sound. As always, typing on the Lenovo Y50-70's keyboard is a pleasure. Battery life of 134 minutes is quite good, too, given its hardware firepower. Overall, this is a worthy winner.

Second

HP Envy 14-j008TX

Following closely on the heels of the IdeaPad Y50-70, the HP Envy is a deserving 14-inch runner up in the Zerol Awards race. It has a Full HD display, is lighter than the IdeaPad and sports very good audio playback (thanks to its B&O speakers), sports 12GB DDR3 RAM in comparison. However, it has a low-powered Intel Core i7-5500U chip and NVIDIA GeForce GTX 950M graphics with 3GB GDDR5 memory, all of which is a notch below the Lenovo IdeaPad Y50-70's performance prowess. Where the Lenovo scores 76 out of 100, the HP Envy gets 60 on the same scale. That number may seem low for comparison's





HP Pavillion 15-ab125AX

Price: ₹46.990

sake, but make no mistakes: the HP Envy 14 is very good for moderate gaming, general music and entertainment.

Third

Acer Aspire E15

The Acer Aspire E15 E5-574G-77RN actually trumps the HP Envy 14 in terms of CPU performance, as it sports a newer Intel 6th gen Core i7-6500U processor. However, it marginally trails the HP Envy 14 in terms of graphics and battery performance. Where the HP scores 60, the Acer gets 58 out of 100. Not too far behind, we know, and still a very good overall performer.

Best Buy

HP Pavillion 15-ab125AX

Scoring just below the Acer laptop in terms of performance (53/100), this particular HP Pavilion laptop sports 1.8 GHz AMD A10-8700P chip, 8GB RAM, 1TB HDD, and AMD Radeon R7 Series M360 graphics with 2GB DDR3 memory. All this under 50k is a real steal! d



Laptops – Hybrid



ablets that masquerade as laptops don't stand to chance Zerol Awards for at least one more year, as they continue to be powered by Intel's Atom low-powered CPUs. The battle for supremacy is therefore limited to laptops that embrace tablet-like features. Here are this year's best hybrids.

Zero1 Winner Lenovo YOGA 3 14

In terms of weight and form factor, the Lenovo YOGA 3 14-inch isn't as sexy or alluring as the HP Spectre x360. However, the YOGA manages to pip the Spectre in two crucial performance aspects – graphics and battery life. Rest is nearly the same. The YOGA 3 comes with a 14-inch Full HD IPS touchscreen that rotates full 360 degrees, Intel Core i7-5500U chip, 8GB

RAM, 256GB SSD and NVIDIA GeForce 94OM graphics with 2GB DDR3 memory. It may look big in terms of form factor, but the YOGA 3's a lean mean performance machine weighing just 1.6 kg.

Second

HP Spectre x360

Between itself and the YOGA 314, the HP Spectre x360 wins the looks and design war, hands down. There's very little difference in terms of performance between itself and our Zero1 Winner, as they sport nearly identical hardware – 13-inch 360 degree rotating touchscreen, Intel Core i7-5500U chip, 8GB DDR3L RAM, 256 GB M.2 SSD, but only onboard Intel HD 5500 graphics. It also trails the YOGA in terms of battery performance – 212 minutes versus the YOGA's 273 minutes.



HP Spectre x360 Price: ₹1,30,990



HP Pavilion
11-k106TU

Price: ₹42,990





Dell Inspiron 11 3148

Price: ₹40,690

Third HP Pavilion 11-k106TU

Similar to the Spectre in terms of look and feel, the Pavilion is both stylish and packed with the latest hardware to deliver very good performance. Sporting the latest Intel 6th gen processor, compared to Spectre's 61, this Pavilion 11 scores 56 out of 100 on the same performance scale. Quite impressive.

Best Buy

Dell Inspiron 11 3148

This 11-inch Dell hybrid scores 55 versus HP Pavilion 11's 56 on the performance scale, offers best performance per Rupee.





Laptops – Ultrabooks

Identifying the best performing size-zero laptop of the year is an interesting hunt. Performance matters here as much as in any other laptop category.



hen it comes to ultrabooks available in the market, they don't offer as much performance, say, as mainstream notebooks or gaming laptops would. They're after all slim, trim, razor thin mobile computers, we mustn't forget, and therefore we can't high expectations in terms of performance. Having said that, ultrabook performance has only improved over the past year. Due to hardware improvements and shrinking components, thin and light laptops are able to deliver performance than ever before. Following are the year's best performing ultrabooks. All of them are highly recommended for a wide variety of consumers who are looking to not only flaunt size zero notebooks but also expect speed.

Zero1 Winner

ASUS Zenbook UX305LA

The 13-inch Zenbook UX305LA weighs just 1.3 kg and it looks too thin to throw any sort of performance punch. However, its combination of Intel Core i7-5500U processor, 8GB RAM and 512GB SSD helps it score very high on our PCMark benchmark - higher than most Mainstream and Hybrid laptops we've tested and featured here within Zerol, and obviously all candidates here within ultrabooks. While its graphics capabilities are in line with the

second placed Dell XPS 13, the Zenbook offers slightly better battery life in comparison with the Dell, which helps it score marginally higher overall in terms of performance - 64 vs 60 out of 100. All things considered, not only is the ASUS Zenbook is an attractive ultrabook to show off, it's also a power-packed machine which scores high on processing tasks, multitasking and battery life.

Second

Dell XPS 13

If it weren't for the Dell XPS 13's Intel Core i3-5010U processor, which is vastly weaker in terms of the ASUS Zenbook's Core i7, it would have easily won this year's Zero1 Award. Sleek, sexy and appealing on the eve, the Dell XPS 13 (9343) actually is the lightest ultrabook we reviewed this year, weighing just 1.18 kg which is very good given its 13-inch form factor.

It also offers extremely minimalistic screen bezel, slightly better screen brightness and contrast ratio than the Zenbook, and an overall well-rounded thin notebook that is well-deserving of its runner's up spot and easily one of the best ultrabooks to have launched in the Indian market this year. Recommended for anyone who's looking to buy an ultrabook around the ₹70k mark. You will love it, it's so good. No kidding.



Dell XPS 13 Price: ₹69.390



HP Elitebook Folio 1020 G1

Price: ₹1,25,580



BEST BUY **ASUS Zenbook** UX305FA

Price: ₹50.999

Third

HP Elitebook Folio 1020 G1

Although sold as a business machine, the HP Elitebook 1040 is an equally minimalistic ultrabook. Solid, compact and well-crafted, the Elitebook strikes a very good balance of performance and ultraportability. It has an Intel Core M processor supported by 8GB of RAM and fast-paced 256GB M.2 SSD storage. The whole unit weighs just 1.2 kg, offers a better screen experience than both ASUS Zenbook and Dell XPS combined, and a respectable processor and battery performance. If anyone's considering an ultrabook for businessfacing usage (security, maintenance, support, etc) in mind, definitely take a look at the Elitebook Folio 1020 G1.

Best Buy

ASUS Zenbook UX305FA

A a slim, trim 13-inch ultraportable that can be easily mistaken for more than what it's worth. It's sleek, ultraportable, and has fast-paced internal hardware, covering most bases, if not more. The best part about is its price! It is recommended for everyone who wants a very good ultraportable notebook without having to spend a fortune to acquire it. 📶



Budget DSLRs

If smartphone cameras aren't cutting it anymore, maybe it's time to invest in a real camera. Here are best performing **DSLRs** under ₹55k.





Canon EOS 750D and Pentax K-S2

Price: ₹51,515 / ₹53,395





Nikon D3200

Price: ₹32,000

Zero1 Winner

Nikon D5500

With the smallest DSLR body that helps first time DSLR users to adapt to the realm of DSLRs, the Nikon D5500 equips a 24.2MP APS-C CMOS sensor, 5fps continuous shooting, excellent movie quality and wireless connectivity. Coupling all of this with an uber-responsive LCD viewfinder and we have a stellar DSLR camera unit that can be used for a good 4-5 years.

The Nikon D5500 is a DX-format DSLR that is compatible with the vast range of Nikon's F-mount lenses. The pentaprism viewfinder has 95% frame coverage, and the 39 focus points means that it focuses at very high speeds, which is ideal for shooting sports events, or fast-moving objects. Areas

where the Nikon D5500 scores high include its excellent image quality, much improved video quality and in-camera audio reception, and wireless connectivity, which allows you to transfer your files from the camera, on the go.

Nikon has packed almost everything possible into the D5500, and it is a decent upgrade over Nikon's older D3xxx series, making it the undisputed winner.

Runner-ups

Canon EOS 750D and Pentax K-S2

The Canon EOS 750D is similar to the Nikon D5500 in terms of performance, but loses out on account of lesser autofocus points, limited dynamic range, slightly inferior focusing speed and low light photography, and a bulkier body. The

EOS 750D is a wider, broader DSLR with straighter edges than its predecessor, the EOS 700D. Having said that, it is still a fine camera to begin with.

Coming up third is the Pentax K-S2, the biggest attraction of which is the completely weatherproofed body. The K-S2 is the only DSLR in this segment, and till much higher up the pricing ladder, which has weatherproofing. Image quality, however, is really good - at par with the Canon 750D.

Best Buy

Nikon D3200

The Nikon D3200 may be a generation old, but at its price with two lenses (18-55mm and 55-200mm), makes for a steal deal. 🚺



Widescreen Displays

PC monitors are evolving

fast, not just in terms

of size and shape but also performance





Beng **BL3201PT**

Price: ₹1,15,000



ASUS PB2870

Price: ₹51,000





Dell Ultra-**Sharp P28150**

Price: ₹45.000

here last year was the debut of 4K UHD monitors at the premium end of the market in India, this year the trend of curved displays has well and truly taken off. We saw and reviewed possibly the two best curved 21:9 aspect ratio ultrawide QHD displays available in India right now. Also, OLED displays, it seems, will have to wait till next year. Sigh. For now, here are the best performing monitors (non-gaming) of the year!

Zero1 Winner

LG 34UC97C

The LG 34UC97C provided a stunning 34-inch curved UWQHD (3440x1440) panel which did an especially good job of displaying moving visuals and delivering a heightened sense of cinematic brilliance. Yes, it narrowly trailed behind the second placed Benq BL32O1PT in all the impor-

tant benchmark scores mathematically, but our subjective experience on this monitor was slightly better than on the Beng, to be honest, and that made all the difference. Watching movies was really something on this widescreen monitor (black bars notwithstanding) and its ultra-wide resolution gave you screen

real-estate of almost two-full widescreen displays which was extremely beneficial. For reading, too, the LG delivered the highest PixPerAn we've received on a large-screened monitor all year - 10 vs 8 (of Beng). If you have a preference for LG and want to stay loval to it, you won't be doing anything wrong by choosing the LG 34UC97C over the Benq B32O1PT.

Second

Beng BL3201PT

The BL32O1PT 32-inch 4K UHD LED monitor impressed us with its overall brightness, contrast and colour gamut prowess - departments where it narrowly outstripped the LG monitor. Its backlight bleed was also slightly less compared to the LG's and it was most visible while watching overly dark frames in a scene. Where it lacked mostly in terms of its head-to-head competition with the LG

Test Parameters	LG 34UC97C	Benq BL3201PT	ASUS PB287Q	Dell UltraSharp P2815Q
Gamut sRGB	100	100	97	96
Gamut AdobeRGB	76	78	75	75
Gamut NTSC	77	76	70	70
Avg Brightness	131.72	146.6	83.4	50
Max Brightness (cd/m2)	218.2	241.3	147.9	103.7
Avg Contrast Ratio	495:1	520:1	345:1	235:1
PixPerAn (Readahility)	10	8	7	7

display was in the movies and videos playback department. However, if you need the 4K UHD experience, you won't go wrong with this Benq choice.

Third

ASUS PB2870

Another 4K UHD monitor from ASUS professional range, the PB287Q came in second in our Zero1 Awards 2014 edition. However, this monitor's so good, that it continues to feature high up on our recommendation list. It may not be the stellar performer as it once was, in light of fresh

> competition, but it still is a great option for consumers to explore.

Best Buy

Dell UltraSharp P2815Q

With a 28-inch screen, the Dell UltraSharp is the cheapest great monitor 4K UHD monitor available in the market, which is especially great for reading or office-related work.

Bluetooth Speakers

In search of best audio performance out of a category of products that's becoming popular very fast





Creative Sound Blaster Roar Price: ₹14.000





Ultimate Ears Boom

Price: ₹14,000

luetooth speakers have grown manifold in prowess, of late.
With the best of audio makers vying for supremacy, what we have are wireless speakers that deliver excellent audio quality, and also act as power banks, boom boxes, alarm clocks, and much more. You can also pair two (or sometimes, more) of the same speaker to provide stereo audio, or synchronise your home audio across multiple rooms.

Additionally, you can even be a little rough with some of these. Certified sand and water resistance is a feature that many of these bundle. Great for your next private pool party or beach soiree right?

The judging criteria for our tests was led by audio output quality, with other aspects being quality of build, durability, range of connectivity, waterproofing, multifunctionality, daisy chaining (multi-unit connectivity), battery life and portability. While some were too big to deserve the portable tag, the sheer quality of audio made up for the large dimensions or other added features. Here's listing some of this year's best bluetooth speakers and of course our one true performance behemoth.

Zero1 Winner

Beolit 15

Bang & Olufsen simply hit the spot with the Beolit 15. Yes, the design is rather different, but build quality is supreme. The front mesh, to the feld-textured plastic, oozes class. The only thing that feels out of place in this unit is the leash, that is essential if you are to carry this picnic box of a speaker around.

The audio quality is exemplary. Bass frequencies are pronounced, and is pronounced with a powertrain that serves as the backbone for tracks that you play. Mid frequencies are equally pronounced, and are high enough to ensure that the audio, in no way, seems flat. The high frequencies are sharp, but are marginally cut off at the peak crests, so that high pitched vocals retain the tonal quality and texture. Audio timbre is excellent, there is no distortion, and to top it all, volume levels are very high.

The Beolit 15 is ideal for audio lovers and casual camp-goers alike. At its price point, however, B&O will find more audiophiles as takers – people who are not concerned about the weight of the device or its looks (it looks really good, only unorthodox), but hardcore audio. At such exemplary audio performance, added features like good battery life, multi-device pairing and the capability to double up as a power bank are nice incentives, making the Bang & Olufsen Beolit 15 the undisputed best Bluetooth Speaker of 2015, and the winner of our Zero1 award.

Runner-up

Creative Sound Blaster Roar

Coming second is the Creative Sound Blaster Roar. At ₹15,999, what you get is loud, powerful audio. Although the highs are slightly biased, it doesn't take the warmth and texture away from tracks, and the bass drivers at the back are quite pronounced. The 'Roar' button adds an extra volume boost, and this will come handy in larger gatherings. This one also happens to integrate a power bank, speakerphone, voice recorder and mp3 player, making it the most equipped speaker, coming second to the Beolit 15.

Best Buy

Ultimate Ears Boom

The UE Boom is water- and stain-resistant, and works perfectly well even after splashing it with water multiple times. The cylindrical speaker body delivers loud, clear audio with an extra punch of bass, which makes it a fun, peppy speaker to carry around. At ₹13,490, it is a versatile speaker that keeps the average music lover and enthusiast happy, and even have something to offer to discerning listeners. With very good audio performance at a competitive price, the Sound Blaster Roar wins the Best Buy award for Bluetooth speakers. ◀



Desktop Processors

No surprises this year as Intel did a clean sweep of awards at this year's processor performance stage. It truly is the performance powerhouse when it comes to processing.



his can be said to be yet another uneventful year in the world of desktop processors with the same trends as last year being carried forth like a bored white collar worker stuck in his mundane life. It seems next year, this section will see a lot more back and forth action happening as the two giants duke it out one more time.

Zero1 Winner

Intel Core i7-5960X Processor **Extreme Edition**

There can be no other that can occupy this spot and for good reason. The Intel Core i7-5960X is based on the same architecture that Intel uses in its server lineup which means there are a heck lot more cores (read eight) and threads (read sixteen) coupled with the latest technology that rears its head in the enterprise segment before making its way to the consumer segment. While we're vet to see pinnacle in terms of the choice of motherboards for the year-old platform, the current range of hardware is more than enough for it to maintain an enormous lead in terms of performance. The X99 platform as a whole has become a lot more expensive compared to the X79 when it had launched so adoption seems to be a little low. Regardless of all that, the Intel Core i7-5960X takes the Zero1 award for

2015 and might retain the same in the coming year if AMD's Zen architecture doesn't have any offerings for the enthusiast segment.

Runner-ups

Intel Core i7-5930K, Intel Core i7-6700K

It shouldn't be any surprise that when it comes to a pure performance category like processors, the runner-ups are likely to be SKUs which are next in line. While Intel does come out with too many SKUs each year we've gone ahead with processors at slightly different price points to cover a wider gamut. The Intel Core i7-5930K is what you'd call a budget enthusiast desktop processor coming in at roughly half the cost as the Intel Core i7-5960X and is the closest you'll get without losing out on features. It has two fewer cores than the flagship and is clocked slightly lower as well but other than that the two are quite identical. If you take one more step back, you'll end up with the Intel Core i7-5820K which has fewer PCIe lanes that cripples an enthusiast platform but is a beast nevertheless.

The other runner-up this year is the Intel Core i7-6700K which is the flagship Skylake processor. With the voltage regulator taken off the die, we hope to see this processor scale better than its Haswell



Intel Core i7-5930K and Intel Core i7-6700K

Price: ₹49,250



Intel Core i7-6700K

Price: ₹33,990





Intel Core i7-5775C

Price: ₹27,670

counterpart. Moreover, the improved IGP, i.e. the Intel HD Graphics 530 has been turning quite a few heads as well. While adoption might take a back seat given how expensive DDR4 memory is at the moment, that will change within a year.

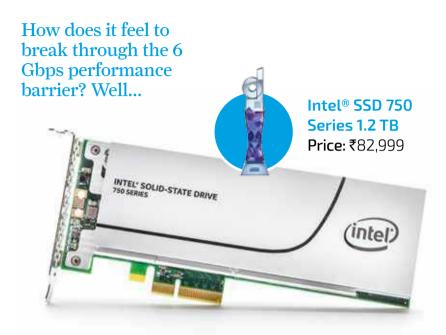
Best Buy

Intel Core i7-5775C

The beast that never was. While most haven't even heard of this processor, it turned out to be an underdog that is yet to hit the spotlight. With a massive 128 MB cache sitting right next to the processor this little Broadwell CPU had a significant advantage compared to every other CPU in its price range.

Moreover, it happens to have a TDP of only 65 W compared to most desktop flagships that end up having something around 81 W - 91 W. So it's cooler, runs equally fast or sometimes better in certain scenarios as compared to flagships and is economically price. Unfortunately, it was released a little too close to Skylake which completely eclipsed the Intel Core i7-5775C.

Solid State Drives



he NVMe standard's popularity this year has ensured solid state drive speeds to immediately burst through with the latest drives boasting of more than 2,000 MB/s transfer speed. Unfortunately, these drives haven't started selling in India. Apart from the jaw-dropping transfer speeds, these drives are also smaller with most of them having adopted the M.2 standard. Also, the fact that small form factor computers, laptops and current gen motherboards all come with M.2 slots have created a huge demand for these drives.

Zero1 Winner

Intel® SSD 750 Series 1.2 TB

Intel made a huge comeback with the 750 series after their time in the shadows. When SSDs hit the consumer market for the first time, it was Intel which was the shining beacon with its X-25 series and later the 120 and 520 series. And now with NVMe, it has once again come to the forefront with the 750 series, with the 1.2 TB variant priced at ₹82,999.

But it's not as if that isn't appropriate, for the money you get four PCIe 3.0 lanes that push upwards of 2300 MBps. We've managed to eke out around 2331 MBps for sequential data transfers and about 100

MBps when looking at 4K sized files. This makes the 75O series an all round better performer than the competition, thereby winning the Zerol Awards for SSDs.

Runner-ups

Kingston HyperX Predator and Samsung 850 Pro

We'd say that the pivotal reason these drives ended up being the runner-ups is that they're non NVMe. The Kingston HyperX Predator is a ridiculously fast PCIe SSD which uses the M.2 standard and makes use of all four PCIe lanes. The only thing holding it back is that the AHCI protocol is simply not designed for SSDs. The 480 GB SKU of the HyperX Predator which we had the pleasure of testing uses 1.4 W of power which is but a drop in the ocean when you look at an enthusiast rig of which they're likely to be a part of. Also, Marvell's 88SS9293 controller is about two years old so you've stretched it as much as one could have. How much you ask? 1400 MBps worth. And it's not just the speed with the HyperX Predator SSD, the board has a minimalistic design with a matte black PCB to soothe the multitude of fanatics who croon at the sight of it. Samsung's SSDs have been hogging the limelight for quite some time and here is



Kingston HyperX Predator

Price: ₹48,000



Samsung 850

Price: ₹10,649





Transcend SSD370S 256 GB

Price: ₹6,849

yet another year where it'll continue to do so. After all it's the best 2.5-inch form factor SSD you can buy. Like the HyperX Predator, it too uses AHCI and was the first consumer SSD to use Samsung's 3D V-NAND technology. The increased density and improved MEX controller give the Samsung 850 Pro a significant advantage.

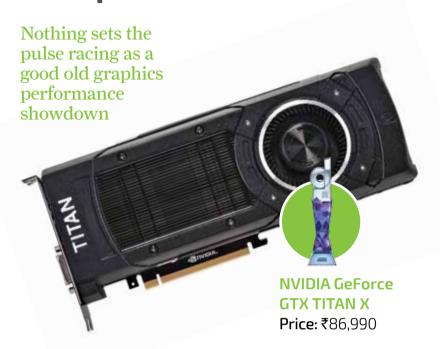
Best Buy

Transcend SSD370S 256 GB

At the end of the day storage is all about capacity/Rupee and Transcend's SSD37OS more than delivers on that front. Being economical does mean that there will be certain areas where performance might be lacking and rightly so the SSD37OS has low write speeds but at 290 MBps, they are more than double of what you'd get from mainstream hard drives so you're still getting your money's worth. Recommended for low-cost speed upgrade to your PC.



Graphics cards



he desktop graphics scenario saw a tumultuous conflict this year as AMD's R9 Fury X ended up being a competitive model against NVIDIA's offerings. For about 2-3 years we'd seen NVIDIA's single-GPU SKUs wiping the floor with whatever AMD had to offer and with a financial crisis at hand, AMD couldn't offer more than rebadged GPUs of its older technologies with little performance increments.

Zero1 Winner

NVIDIA GeForce GTX TITAN X

Coming from a family of goliaths, the NVIDIA GeForce GTX TITAN X was yet another ace performer with a massive 12 GB of RAM to boast for. Pushing the boundaries of performance each year, NVIDIA's TITAN sure did live up to expectations. The massive RAM cluster is only one of the many signs that show how the industry is moving up towards making 4K the next resolution standard that'll be accepted by one and all. After all it cranks out 50 FPS or more in almost all AAA games running at 4K while previously vou'd have to get a dual GPU card to get the same or more. The R9 290X, GTX 980 and 780 Ti were all great performers at 4K but for the generation of AAA games that were around back then, current titles like Shadow of Mordor and GTA V will have certain scenarios where you'd experience inconvenient stuttering but the TITAN X makes those go away. However, the NVIDIA GeForce GTX TITAN X is still no match for dual GPU cards or flagships in SLI / CrossFireX so you might as well spend the same amount getting two NVIDIA GeForce GTX 980 Ti and SLI them to get a lot more performance.

Runner-ups

ZOTAC and ASUS GeForce GTX 980 Ti

What do you get for roughly half the price of a TITAN X and performs just about the same? The NVIDIA GeForce GTX 980 Ti of course! And we didn't see any lack of competition here when it came to brands with ZOTAC's GTX 980 Ti AMP! Extreme coming in at second and the ASUS STRIX GTX 980 Ti DC3OC coming in at third. With a fairly straightforward condition of performance being the sole parameter for the Zero1 Awards, it shouldn't come as a surprise that ZOTAC's GTX 980 Ti AMP! Extreme takes the crown. It's clocked at 1253 MHz and has quite the cooling capacity to handle the heat it generates.

And right at its heels is the ASUS STRIX GTX 980 Ti DC3OC with a base



ZOTAC GeForce GTX 980 Ti

Price: ₹59.338



ASUS GeForce GTX 980 Ti

Price: ₹10.649



GeForce GTX 960

Price: ₹16,250

clock of 1216 MHz and a build quality that few bother to top. It's 12+2-phase VRM circuitry should be more than sufficient for it to be coveted by overclockers and it isn't lacking in the cooling department either. MSI's GTX 980TI GAMING 6G isn't that far behind but with only so many places on the podium, it lost out but it's nevertheless worthy of a mention.

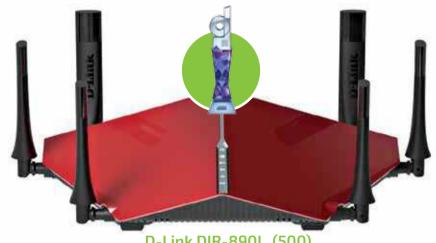
Best buy

GeForce GTX 960

The GTX 960 sure happens to be priced appropriately for most Indian gamers. If we were to look at the international scene, then the GTX 970 seems more deserving of the Best Buy award but since India happens to be a more price conscious market the GTX 960 is better suited. Comparing prices on top ecommerce sites in India, we found that these cards can be obtained for as low as ₹16,250. Specifically, the Gigabyte GTX 960 Gaming G1 carried this price tag at the time of writing this section but we understand that prices fluctuate and some other SKU might be better priced by the time you check the prices so we'll have to be brand agnostic here as well.

Wireless Routers

Separated by slivers, that's the performance difference between networking contenders this year



D-Link DIR-890L (500)

Price: ₹17.875

e only have AC3200 routers this time since AC5300 routers are still undergoing certification for sale in India.

Routers with 5.3 Gbps of bandwidth might seem overkill but when you consider that mobile devices are increasingly adopting Full HD / 2K screens then a household with multiple such devices will definitely require plenty of bandwidth for a seamless experience.

Zero1 Winner

D-Link DIR-890L (500)

D-Link's crab-like DIR-890L turned out to be quite the attention grabber. For starters, it comes with multiple colour choices with one SKU sporting a striking red shade. The router makes use of three bands, one 2.4 GHz and two 5 GHz bands, to provide the massice 3200 Mbps bandwidth. What's irksome about this router and every other AC3200 router on the market is that they all lack ADSL modems. The DIR-890L does feature some other neat technologies, though, like Smart Connect feature ensures that 802.11 devices with similar protocols end up on the same band so that the entire network's quality isn't compromised if a device with an older 802.11 protocol were to connect to the network.

Routing performance is quite good with each uplink and downlink handling around 200 Mbps on the 5 GHz band on an average. Even WAN to LAN speeds are quite high with speeds reaching nearly 800 Mbps. The D-Link DIR-890L edges past the competition by a narrow margin, after all the flagships are all powered by the same Broadcom SoC.

Runner-ups

NETGEAR R8000 and ASUS RT-AC3200

Netgear's Nighthawk X6 and ASUS' RT-AC3200 could all share the first prize with the D-Link 890L if you run the same set of benchmarks over and over because they'd average out. That's how low the difference is between all three routers. And Zerol is all about performance and by a stroke of luck these three ended up getting scores quite close to each other with the D-Link scoring the most. So if we were to look at other aspects then ASUS' UI is more suited for an enthusiast since they make all those options easily accessible while the D-Link and Netgear routers have simplified their UI for the common man. Build quality is not a problem since brands rarely sacrifice on this aspect on their flagships.



NETGEAR R8000

Price: ₹14.990



ASUS RT-AC3200

Price: ₹24.750



TP-Link **Archer C20**

Price: ₹2,270

Best Buy

TP-Link Archer C20

As we've mentioned earlier, the majority of the internet consumer base in India happen to use ADSL and currently, AC1900 routers seem to be at the sweet spot when it comes to a balance between bandwidth, feature set and cost. But they still end up costing a bomb with the most economical AC1900 router costing somewhere around 12K, so you have to scale down till you end up with the TP-Link Archer C20. It is one of the few AC750 routers out there that costs next to nothing. You will have to get another ADSL model to make it work on ADSL connections or you can wait out till the Archer D20 / D5 / D2 becomes available since they'll be incorporating ADSL modems. ADSL modems are generally more expensive compared to their non-ADSL counterparts so getting two modems like we just mentioned is the economical way out. It might end up costing you more in the long run since you'll have two devices consuming the same amount of power instead of one. The C2O is cheap and even has two external antennae, a luxury when it comes to cheap routers. 📶

Smartwatches





LG Watch Urbane Price: ₹29,900





Moto 360 (1st Gen) Price: ₹13,999

earables are still fairly new globally, with the market being at a nascent stage. Smartwatches, though, have a definite appeal for a lot of people. They've been promoted through history, in sci-fi movies, cartoons, comics and so on. Which is perhaps why the current generation smartwatches have left many a tad disappointed.

In the two or so years that this market has been growing, there have been some pretty innovative devices for us to look at, many of which entered the fray just this year.

Zero1 Winner

Apple Watch

Apple may have taken its time to bring it to India, and the Apple Watch may not be the most economical gadget to buy today, but it's hard to deny the user experience that you get from it - nothing but the best. Considering the smartwatches that you can find in the market today, Apple's vertical ecosystem seems to have once again allowed the technology giant to come up with a product that is superior to its competitors, even if by a little bit.

If you own an iPhone and are sitting on a pile of cash, this would be the only

smartwatch that you should buy. Of course, we recognise that being compatible with iOS devices alone isn't exactly a good thing, but we also can't overlook the fact that the Apple Watch is simply great when it comes to performance and design. It is easily the most premium of all the smartwatches that you can buy in India right now and Apple's innovation with the digital crown has set it apart from its peers.

Be it the Siri integration, or talking directly through the Apple Watch, in the current market, this is a job well done. The Apple Watch doesn't stutter or get stuck at tasks like many Android Wear powered smartwatches do. A worthy winner!

Second

LG Watch Urbane

The LG Watch Urbane has its strong suit in how it looks on your wrist. With the right strap, the Urbane is the closest a smartwatch has come to looking like a real watch, which is something many critics have found lacking from these watches. In addition, LG has been doing well to support the Watch Urbane and the fact that it can work with an iPhone, albeit with limited functionality, is an added plus for it.

Like many other smartwatches though, the Watch Urbane also costs a pretty

penny, but it is a good buy for enthusiasts who have the cash to spend.

Best Buy

Moto 360 (1st Gen)

It's a pity that the newest variant of the Moto 360 smartwatch hasn't been brought to India yet, but as far as this year's awards are concerned, that just makes it better for the original Moto 360. Having dropped its pricing to ₹13,999, this is easily the best buy amongst smartwatches in India right now. It runs well and can bring you an accurate depiction of Android Wear, without breaking the bank.

When Motorola originally announced it in India, we were quite disappointed with the pricing, but with its price dropped now, this smartwatch, though older generation, is anything but obsolete. It works with most Android phones out there, and with Android Wear on iOS, it can go with an iPhone too. It delivers almost every feature that Android Wear boasts and does so with respectable fluidity and smoothness.

Considering the fact that most buyers today want to just try a smartwatch to get a feel of these devices, the Moto 360 is the ideal pick. You won't have to spend a whole lot of money, but get to enjoy the full power of Android Wear and smartwatches.

Fitness Bands



s far as wearables are concerned, fitness bands make a bit more sense to people than smartwatches. If you're into fitness, you might find one of these gadgets really useful. In addition, the fitness band market in India took a sharp turn this year, with big names like Fitbit and Jawbone entering the market, while there's also an even spread of devices across price ranges that can be bought now.

You can buy a fitness band in India for as low as ₹1,000 right now, or go as high as ₹20,000, and the efficiency, accuracy and all other characteristics will change based on the pricing, just like it used to when smartphones originally started selling.

Zero1 Winner

Jawbone UP3

Despite the fact that fitness bands are health oriented devices, their looks are really important, simply because they have to be on your person at most times. The Jawbone UP3 accomplishes the balance between style and functionality admirably. It has an aluminium body, which easily fits with most other accessories that you would wear on your hand. That isn't the only reason we're giving it the award though.

One of the most useful aspects of the Jawbone UP3 is that it can detect when you're sleeping automatically, which is important considering how often we can forget to put a smartband on sleep mode before going to sleep. In addition, the band is capable of tracking your resting and passive heart rate, steps and workouts. It is also light and unintrusive.

Despite the things it can do though, the best part of the Jawbone UP3 is the UP app that it functions with. Jawbone's UP app, which is where you will see all your data gathering, is arguably the best fitness app on the app stores right now. It is well designed, easy to use and has a smart coach feature that is truly fast. In fact, the Jawbone's Smart Coach can be especially useful for us procrastinators who keep planning to exercise but never actually get down to it. The app has a way of pushing you into it without you realising what happened.

Second

Fitbit Charge HR

The Fitbit Charge HR can do everything that the Jawbone UP3 does, but it loses the top prize for three main reasons. These include the app, battery life and looks. The Charge HR has a minimalistic design, but

doesn't quite look as attractive as a fitness band should. In addition, it's battery life goes up to about 5 days, which is about two days less than what the UP3 can deliver.

That said, the Fitbit Charge HR is still the best band that Fitbit is selling in India right now. It's accurate, and hence dependable enough to track your heart rate, sleep cycle, steps etc. without any glitches. The fact that it has a tiny display of its own also allows the Fitbit Charge HR to be used as a watch, which puts a few points in its favour. If you want Fitbit's brand name then this is the band to go for right now.

Best Buy

Jawbone UP2

The Jawbone UP2 is lighter than the UP3 and doesn't have a heart rate sensor, but it also costs lesser than both the UP3 and the Fitbit Charge HR. In terms of looks, it could easily be considered as the best out of the three. The UP3 looks like a friendship band, which means you can wear a regular watch and have this on the same wrist, without people asking questions. Moreover, the UP2 is as accurate as the UP3 and can also track when you're sleeping automatically. The fact that Jawbone's UP app is our pick of fitness apps adds the cherry on the cake.



Mini PCs



he ULP powered Mini-PCs have become as small as matchboxes like the Gigabyte BRIX, ASRock Beebox and Liva Core. And on the other hand those that have mobile processors have retained the chunky size like the ZOTAC Magnus and the ASUS GR8. Both types are still small enough to be easily mounted onto the back of your monitors using the VESA mount.

Zero1 Winner ZOTAC ZBOX MAGNUS EN970

ZOTAC has been known for making Mini-PCs and mini-ITX motherboards for quite a long while. The ZOTAC ZBOX MAGNUS EN970 has everything you'd expect from an ordinary computer. The Intel Core i5 and the NVIDIA GTX 960 endow it with the gaming prowess that pegs it way above average according to Steam's hardware survey. Then it has an M.2 slot with two PCIe lanes and two 2.5-inch SATA slots for SSDs. And if you were thinking what we're thinking, then yes, the two 2.5-inch SATA drives support RAID. In fact, our benchmarks were performed with two SSDs in RAID O producing transfer speeds of around 1,000 MBps. This machine ushers in a new era where the word Mini-PC doesn't mean hardware compromise.

Runner-ups

ASUS GR8 and Gigabyte Brix GB-BXi5H-5200

ASUS's GR8 was released early in the year and therefore, uses slightly older hardware. But it's very much in the same vein as the MAGNUS. With an Intel Core i7-4510U, its compute power is at par with the MAGNUS. In our benchmarks, it scored 4578 points in PCMark 8 Work Accelerated which is just 10 points shy of what the MAGNUS EN970 scored. It's the graphics power that made the difference. NVIDIA's GTX 960 is much more powerful since it is a second generation Maxwell while the ASUS GR8's GTX 750 Ti is based on the first generation Maxwell chipset and is binned for a lesser performance segment. But when it comes to looks, the ASUS GR8 is much better than the MAGNUS EN970.

Coming in at third is Gigabyte's Brix GB-BXi5H-5200. It has a much smaller footprint and relies solely on Intel HD Graphics 5500 for its graphics processing. Needless to say, its compute performance is the same as the MAGNUS EN970 but the lack of a discrete GPU knocks it down to third place.

This also means that the Brix GB-BXi5H-5200 is considerably cheaper than the other two units and would be favoured



ASUS GR8 Price: ₹89,500



Gigabyte Brix GB-BXi5H-5200

Price: ₹27,299





ASRock Beebox N3000

Price: ₹9,959

heavily for this reason. Definitely worth considering at a lower budget.

Best Buy

ASRock Beebox N3000

If you're looking at getting a rig setup in under ₹20K then the ASRock Beebox N3000 is one of the few Mini-PCs that can get the job done for you. Powered by an Intel® N3OOO, the Beebox has quite a few advantages over the competition. For starters you have a choice of storage formats and it's one of the few Mini-PCs to come with a USB Type-C connector and a media centre remote. While the remote can be done away with the help of any remote mouse APP on your smartphone, its remaining features still make the Beebox N3000 quite the economical wonder since it's priced under ₹10K. So you can get the rest of the components and peripherals to set it up completely in under ₹ 20K which is why the ASRock Beebox N3000 wins the Best Buy. 🚺

4K UHD TVs



his year's CES proved that televisions are not dying anytime soon and what followed was a plethora of some of the best TVs that we have seen since plasmas. Our top TVs for this year are hard to get and you'll probably be enjoying them in showrooms for the time being, but they're a sign of things to come and we are loving it.

Zero1 Winner LG 4K Curved OLED TV

Take heed videophiles, plasma has finally been outdone. The OLED technology that LG employs in its new UHD televisions is better than plasma televisions of lore. And that is why this LG TV is the winner of this year's Zerol Awards. It achieves a contrast ratio of 81330:1 at 50% brightness, which beats the best out by a pretty mile. The white levels lie at 6900K, as close as it gets to the desired 6500K level. In addition, OLED tech allows LG to eliminate motion blurs, which is really good news for gamers. Turning off a pixel achieves true black for LG, so in movies like Gravity, outer space looks like nothing you've ever seen on television.

What's more? The TV may breathe life into LG's once defunct WebOS again. The company's OS operates on this, making it one of three TV OSes to watch out for right now. It's really smooth and works without any glitches. If you haven't used

a smart operating system before then it'll take some getting used to, but once that is done, you wouldn't want your TV to operate in any other way.

Second place

Samsung Curved SUHD TV

This UHD TV made us rethink our stance on curved televisions. Apart from the curved body, it is beautifully constructed and quite easy to assemble. It runs on Samsung's Tizen OS, which the company has also been trying on phones. Unlike the phone though, the OS works quite well on the TV and the motion-controlled remote is quite easy to get used to.

Before the LG 4K OLED came into the Digit Test Labs, this Samsung TV was amongst the best that we'd ever tested. The 1100:1 contrast ratio is still amongst the best, but it's behind the TV mentioned above. It achieves a maximum brightness of 302.9 cd/m2 and even though it doesn't have an OLED panel, it comes pretty darn close to it in terms of black levels.

It upscales 1080p and 1080i content to UHD and does a really good job of it. We even used a PS4 to game on it and found no judder or response lag issues. If you carry a select few Samsung phones, then this TV has some added screen mirroring functions that you can take advantage of, and they are work quite well. A joy to behold, this Samsung SUHD TV!



Samsung Curved SUHD TV Price: ₹4,40,000





Sony W950C Android TV Price: ₹1,32,000

Best Buy

Sonv W950C Android TV

The third of the three big TV OSes, Android TV is being used by Sony in all of its new televisions. While this Sony TV still costs a pretty penny, it's hard to argue against the picture quality and other performance aspects. If Sony could have provided 4K support for this price, we would perhaps have considered this to be the winner of our Zerol awards this year as well.

When we started reviewing this TV, we were worried about the lack of 4K support, but we soon realised that Sony's focus was on quality and not the quantity of pixels. The wide colour gamut and very good black levels allows it to achieve a better contrast ratios than most of its competitors. In addition, it doesn't oversaturate colours like many other TVs on the market today. If you're a fan of true to source colours on whatever you watch, then this is the TV or you.

On top of all of this is Android TV, which is really easy to use. Amongst the three TV OSes mentioned here, Android TV is perhaps the easiest to get used to, and with Google behind it, we think it would get more content support.

As if all that wasn't enough, the TV also delivers excellent sound quality, ensuring that you won't need to buy extra speakers with it. 🚺







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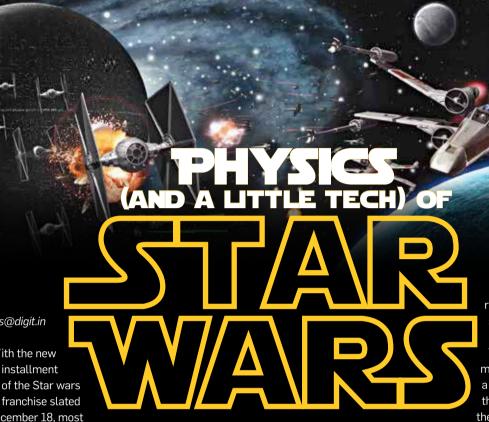
Space age

A secret alien report that has finally been declassified. And we've got a copy



3D Guns Illegal

Guns were always illegal and now 3D printing of weapons or having blueprints is illegal too in Australia http://dgit.in/3Dgunsban



to release December 18, most of us would probably want to forward time and watch it as soon as possible. That John Williams score, freaking trailers and the general magnitude of what Force Awakens is likely to unveil gets us geeks jumpy to our core. In this article we aim to see Star Wars holds up when parsed through the filter of current day physics. We dare not be critical of something that is almost sacred to millions. But if not analytical, what else do you expect true geeks to be?

Tatooine: Fact or fiction?

One of the most iconic shots from the entire Star Wars saga is the one where Luke Skywalker stands on his home planet Tatooine and watches twin suns setting. Tatooine unlike Earth orbits around not one but two stars. It's an awesome shot, sure, but does physics allow for a planet to orbit around a binary star system? According to recent studies and evidence it does. A Tatooine sunset is possible after all. For a long time it was believed that the combined gravitational force exerted by two suns would provide too hostile an environment for an orbit of a rocky planet and Tatooine might just be a figment of a creative genius's imagination. In 2011 however,

We analyse what they got right and what they got wrong. But beyond that we also tell you about current-day technologies that could one day make those great leaps of imagination actually come true.

scientists discovered a half gas and half rock-ice planet dubbed Kepler-16(AB)-b that orbits the binary star system Kepler 16-b. But how do the planets form midst all that gravity exerted by the twin suns? It's simple. They don't. According to a recent study a planet actually forms away from the binary star center and then gradually settles into an orbit. Also if the binary stars are extremely close together, a planet such as Tatooine can be in orbit far away from the twins; so far away in fact that the planet practically experiences the gravitational field of the twins as one. So... Tatooine can exist, but can it support life? So far though it looks like our luck has maxed out as most real planets orbiting binary suns are cold and inhospitable as we know it. Tatooine as depicted in the movies however is largely a desert world which in theory can support life. But, there has never been a hint

of rain or the presence of an oasis on the planet, so how do the natives of Tatooine survive in this arid, dry wasteland? Advancement in technology has now made it possible (if only in the 'foreseeable' future) to harvest water from moisture and indeed moisture farmers make their appearances in the movies. Astrobiology questions aside it is pretty cool that Star Wars foreshadowed the existence of a planet with twin suns – an amazing scientific discovery.

Death Star: Futuristic weapon or something out of a megalomaniac's dream?

Even people not familiar with Star Wars surely would've heard of the Death Star. In an epic scene from the movie franchise the entire planet of Alderaan is blown apart to smithereens by a single ray from the Death Star. Alderaan is not a marble, or a dwarf planet. By all estimates, it is a solid Earth sized planet. How much energy does it supposedly take to destroy an entire planet? Does current technology come close to replicating the Death Star's power.

A few back of the envelope calculations suggest that if the Death Star harnessed our Sun's nuclear fusion produced energy,



Shazam now faster!

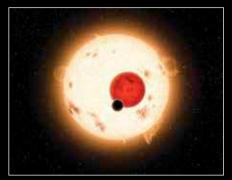
After the latest update, Shazam's song recognition now works even faster. Know more: http://dgit.in/FastShazam



Google's new badge!

Google employees are working on a communicator badge like Star Trek to communicate with just a touch. Read here http://dgit.in/GCbadge

Feature



Hello Tatooine, two very good mornings to vou

it would still need a weeks supply to blow up Alderaan. The Death star didn't need a week. It needed a few seconds tops. Or maybe they used antimatter.

Thanks to Einstein we know that if we manage to convert matter to energy we can obtain a large amount of it. Antimatter, as its name suggests mirrors ordinary matter in regard to some properties. If antimatter collides with regular matter it results in mutual annihilation, releasing energy in the process. Some number crunching gives us an estimate for the mass of antimatter needed to blow Alderaan - a trillion tonnes. In the grand scheme of things that is not really very much and it is very likely that that much antimatter can be harvested and safely stored. Current day earthlings haven't figured out a way to keep stored antimatter away from normal matter, but then we haven't made a lightsaber either. So there you go. The inventors of the Death Star probably figured a way to stream antimatter. The antimatter met Alderaan's ordinary matter and boom!

The million dollar question is does any Earthbound technology come close to the Death Star's power? Nope. Not even kind of close. Phew!

Lightsaber - Enough said

A lightsaber is easily the most famous weapon there is: real or not. We're pretty sure there are people in Honolulu who haven't heard of an AK-47 but mention a lightsaber and they'll high five you for sure. A lightsaber is elegant, powerful, brilliant and awesome. Those are four words you never hear being associated with a weapon, do you? But, the lightsaber is all of that and more. What's not to like about a powerful

beam of contained energy that can literally cut through anything and one that you can wield like a freaking sword! If you didn't know better you would call it a laser stick (you'd of course be decapitated for that travesty). Still the lightsaber does look like a fancy laser, yes, but it's highly unlikely that the beam of energy is a laser. A laser is basically a controlled beam of electromagnetic radiation. For a "laser" lightsaber you would have to have a contraption that emits a beam of high intensity light and somehow at the end of a metre stop it. You see, light doesn't do that. It just keeps going, traveling at a massive speed unless it is reflected, absorbed or... wait a minute, pulled back. What has the gravitational pull to pull light? You guessed it right, its a black hole. Yes, those mysterious powerful beasts would somehow have to exist in in a lightsaber hilt to have a lasersaber. Of course this causes some practical issues with usability. A black hole will swallow all matter inside a radius, not to mention completely swallow the emitted laser beam. Also to fit inside the hilt, a black hole will have to have a small volume which means it would have to be heavy, really really heavy. If CERN found out a way of producing micro black holes that could be tuned or controlled this bizarre contraption might actually work, but we have another problem. Light is made up of photons which when interacting with other photons (read : second light saber) would really not behave like a solid (as in the films), instead just passing through unscathed. Should this debunk the whole laser based lightsaber theory? Maybe not.

Very recently some physicists from MIT and Harvard succeeded in defying what



We just told you how to make one. What're you waiting for?



Dear CERN how are those portable black holes coming along? We need our lightsabers please.

was known about photon interactions and clumped photons to form some sort of a pseudo molecule boosting the chance of someday using light to actually form a solid like structure. Scientists have succeeded in slowing down light considerably and recently a beam of light was actually trapped in a crystal for almost a minute. Maybe, just maybe, one day scientists will succeed in combining these techniques and come up with a laser based lightsaber. Till then however we would have to let a lasersaber be, no matter how cool a portable black hole sounds.

Can Physics offer some other explanation. Yes. It almost always can. Perhaps the energy beam of the lightsaber is made up of plasma, often referred to the as the fourth state of matter. Plasma is the state created when we superheat a gas to such an extent the atomic electron bonds break releasing charged ions that are very conducting. Plasma torches that can cut through common day materials have been made. But those are unwieldy, have small beams

> and require large amounts of energy. So, how can a plasma based lightsaber work? Here we go. The hilt of the saber houses all the advanced technology needed to guide, contain and power the saber. A powerful battery produces the plasma state which is then focused and passed via a crystal based optical setup to generate the saber's unique glow and properties. The beam is

Feature

Crazy Collidoscope

Ever imagined how a two player synthesizer would look or work like? Is it even possible? Find out: http://dgit.in/collidoscope



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Opera Max strives hard to reduce your data consumption while you stream music. Check it out: http://dgit.in/DataOperaMax

then recalled into the housing via some containment field. The energy is finally treated to a final state to trickle to the battery and complete one hell of a circuit. This looks great on a blueprint but present day batteries are in no way powerful enough to generate plasma, not to mention material science will have to make generation leaps to house this high temperature equipment and create focusing crystals for precise beams. Plasma solves the two problems posed by lasers. It will interact with another plasma based beam like a lightsaber should, and it is possible to contain plasma to form a limited length beam but the technology hasn't quite caught up with our dreams (or rather George Lucas's).

Blasters: What are they anyway?

An inelegant weapon yes, but at close range even the most skilled Jedi appreciate the power of a blaster. But what are these blasters? They are certainly not laser guns. Like we discussed in the context of lightsabers, a laser beam basically consists of photons which travel at the speed of light. The beam from the blasters however moves much much slower than that. For one thing we can "see" those projectiles and the Jedi can even deflect them using their lightsabers. Interestingly, the US Navy has deployed a laser weapon on one of its ships: The USS Ponce. Inspired by Star Wars perhaps?

The typical Star Wars blaster however uses a fictitious energy rich gas in a chamber that is somehow supercharged with energy and converted to a coherent light filled beam or "bolt". While this sounds like a simple construction there are plenty of engineering issues with the current available technology to develop a similar design. Dealing with the heat released on converting gas to energy, actuating the gas and forming a coherent beam and finally, coming up with a compact power source to achieve the above design. Beyond all this let's ask a very important question: is a Blaster a practical weapon? Analysis suggests the speed of the blaster 'bolt' is less than a bullet. So why would you want to build one? It's simple. A Blaster is cooler than a machine gun. Cooler trumps guicker and here in our discussion of Star Wars tech cooler is always better.

Interstellar travel: Hyperspace and it's unbelievable physics

Time and again in the Star Wars universe space ships cover incredibly large distances in relatively short time. By incredibly large we mean distances where light would take years to reach and by relatively short time we mean time scales accessible to mortal humans. How are these trips undertaken? Does physics have any explanation for these seemingly impossible journeys or are they simply a lazy writer's plot device to allow interstellar travel.

According to Einstein's special theory of relativity the speed of light is invariant so that sets a bound on the maximum speed a spaceship can theoretically achieve. The closer the space ship will get to lightspeed, the slower time will get and the more mass it will gain. Eventually the mass of the spaceship will inflate to an absurdly large number that cannot be powered for a journey in any conceivable way, not to mention that on return Han Solo's kids would have aged more than him.



Too inelegant to be a Jedi weapon

So is there some way to cheat Einstein's special theory of relativity and somehow circumvent this speed limit imposed by it. Apparently, we can and the cheat code is hidden in Einstein general theory of relativity.

Now it is well know that Han uses 'hyperspace' for interstellar travel. What hyperspace might be is a hotly debated topic, not only in the science fiction geek community but also on the physics nerd table (Both groups have significant overlap of course). You see, space and time are not separate entities but are intricately linked and form the fabric of the entire universe. We call this fabric as spacetime. Think of spacetime as a two dimensional sheet stretched till the farthest eons of space and

time. Now imagine two dots on the sheet, lets call them Tatooine and Alderaan. The dot between those two is the Millennium Falcon. Now imagine if the sheet allows expansion and compression, we could expand the gap between the Falcon and Tatooine and compress the gap between the ship and Alderaan. The points haven't moved anywhere absolutely but still the Falcon is closer to Alderaan! This is essentially what a warp drive is imagined to do, expand spacetime behind and contract spacetime in front of a space vehicle to basically bring the destination to the vehicle enclosed in a sort of spacetime bubble. We've spoken about the Alcubierre drive many times before so we won't bore you.

Another explanation for the casual interstellar travel depicted in Star Wars is the worm hole explanation. Ironically "Interstellar" did a good job of explaining it with the folded paper and holes so we won't go into it here. Why haven't we done it yet? Manipulating spacetime requires gargantuan amounts of energy, a scale we aren't even close to reaching. And though elegant these aren't the techniques the Melamine Falcon probably uses. A possible option is that Han actually accesses one of the many dimensions curled up in the universe (as proposed by String Theory) which allows him take shortcuts that wouldn't be possible in a simple three dimensional world. All this sounds simple in theory but all this is as close to fiction as science can get.

Flight Dynamics and Star Wars : Not exactly a match made in

Star Wars has an awesome collection of space vehicles, fighters and ships. Like in any other science fiction world these craft are powerful machines and capable of executing complex manoeuvres. But do they hold true to the laws of Physics of the known universe? Let's find out.

Let's start of with a refresher course in aerodynamics. All terrestrial aircraft need to generate lift to stay afloat. Hence, they are equipped with wings that essentially push against air and create a pressure difference that creates lift. You know where we're leading up to ... Yes wings are redundant in the vacuum of space. In space a vehicle need only use directional thrusters



A 'Traditional Smartwatch'

Movada along with HP brings you a smartwatch that retains the traditional design of a timepiece. Check it out: http://dgit.in/HpMovado



The perfect living room

Check out this list of gadgets that should be a part of your living room to make it just perfect: http://dgit.in/PerfLR

Feature

to change momentum and once it does it will continue uninterrupted, unless it enters another gravity field. One can of course argue that the craft we see in Star Wars have dual functionality – in space and for terrestrial applications. And of course the fact that the X-Wing wouldn't be called the X-Wing without, well wings! Also banking (tilting of aircraft) is unnecessary other than for cool shots of these space craft zipping past the camera.

Robotics and Technology: Star Wars got there first

The droids in Star Wars were a big hit and R2D2 and C3PO have had a massive impact on popular culture. A fully functional droid however wasn't realized until very recently and that droid too has little intelligence. While big corporations have had major successes with making robots for different purposes, we are yet to come up with a multipurpose and multi functional droid that is truly intelligent (ASIMO doesn't count). Hopefully all that AI research done at Google and Facebook along with the cutting edge robotics produced by Boston Dynamics and DARPA will catch up soon.

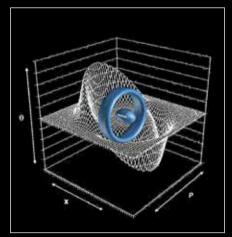
Cybernetics is a very new field but traces of this emergent field were seen in the Star Wars movies when Luke and Annakin Skywalker were both fitted with some prosthetics that had cybernetic abilities. Basically the prosthetic arm was connected to the actual tissue in a way that neurons could simulate the artificial limb like they would a normal arm. Integrating neural pathways with state of art mechanics has not been so easy. There is however widespread interest in the technology circles for such projects and very recently a prototype of an advanced robotic prosthesis system dubbed "Luke's arm" has been greenlit for further development by DARPA.

Another technology that caught the audience's fancy was the Landspeeder hovercraft that Luke frequently uses to glide along on the desert land of Tatooine. We have something similar that 'glides' along really fast and transports people: Maglev trains. But those trains are dependent on the surface they run over whereas the hovercraft in Star Wars

aren't. In fact most of the levitating vehicles in Star Wars run on a gravity repulsing field that within the realm of current science knowledge looks hopeless.

Still dear geek don't be dejected. A working Landspeeder like vehicle was recently built and tested by a company called Aerofax. They use some sophisticated rotors combined with a flight control system that responds to the user. The company's prototype basically brings the controls of a aircraft in flight to a terrestrial (almost) vehicle suitable for any terrain.

Also on the bright side a plethora of technology first seen in the Star Wars film



If only folding space were easy

has now made it to our lives (if not daily lives). From Holograms, artificial organs and vaporators we've perhaps been seeing real life imitate art. We're not complaining!

The Force: Is it strong with you?

Finally, we come to one of the most discussed aspects of the Star Wars universe : the ever mysterious Force. The Force is a gift, an ability that heightens senses and allows the user to communicate and control matter like no other. If the Force is strong with you can levitate objects, crush things without touching them and also near predict the future! Before we explore if the Force has any origins in Physics a customary disclaimer is warranted. Since the subject of the force is so divisive and almost out of the realm of science most of the claims here are to be treated as just theories. The section takes more liberties with re-imagining physics. Lets start with the Jedi Mind Trick. Research

at Princeton University that conducted extensive experiments supports the theory that brain activity can change outcomes of events like coin tosses. This effect usually called psychokinesis is very very small and the results of the experiments have been criticized citing failure to eliminate statistical bias. While psychokinesis might be a strictly quantum effect and hence be very very small, how the Jedi's scale that up remains a mystery.

Earlier in a Digit demystify we spoke about virtual particles that pop in and out of existence and lend space what is called zero point energy. It might be possible that the Force is a manifestation of this energy. Perhaps force sensitive individuals like the Jedi have the ability to access these particles (they exist for such a small time that we haven't able to isolate them till date) and hence the massive energy that pervades all of space and use to manipulate matter at a fundamental level. A major difficulty with providing 'scientific' explanations for the Force is that it is just so versatile. None of the above explanations explain the Force in all its glory. For example in order to transfer information (and not just energy) we might need particles that are not short lived, but then those particles might not interact well. For seeing the future the Force wielder might somehow be able to interact with tachyons - mysterious particles that travel faster than the speed of light. But then those particles might not explain other properties of the Force. Maybe the Force is something what scientists have been missing for a long time: another fundamental force (like gravity, electromagnetic and nuclear) that basically exists as a field that Force sensitive beings are able to manipulate to their advantage. Many in the field of particle physics believe that there exists a energy field called the Higgs Field that gives all matter mass. Like the Force this field fills up space but unfortunately is not sufficiently equipped to lend the Force all its awesome powers. In conclusion this pretty much answers the question the section headline posed. No. The Force is not strong with you. Unless you are in an alternate reality, in which case stop reading this article and use the damn Force! [1]

Space Age



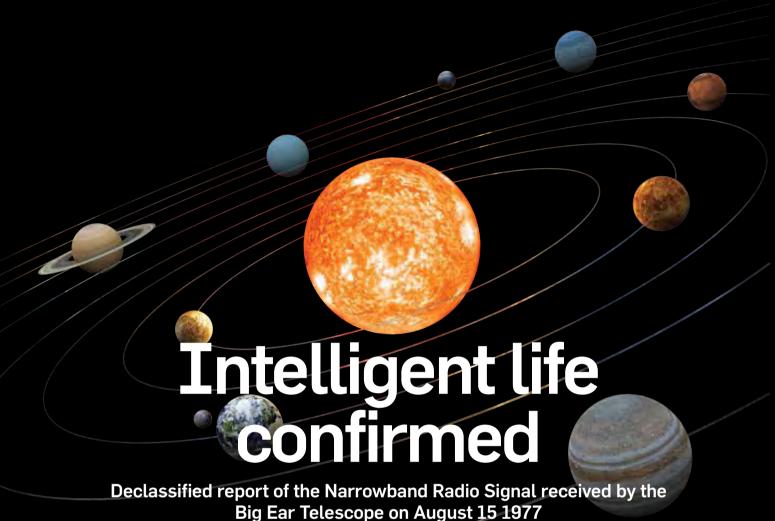
Facebook in VR?

How would your news feed on facebook look in VR? Apparently they're already working on it: http://dgit.in/FBookVR



'Giff-age' is here!

Giffage launches its new keyboard. Allows you rapid access to GIFs all over the internet: http://dgit.in/Giffage



Sandhya Ramesh readersletters@digit.in

On August 15, 1977 a 72 second long narrowband signal was intercepted by Jerry R. Ehman at the now defunct Big Ear at Ohio State University. This signal was never detected again despite constant attempts to search for such a broadcast. While all known attempts to decode that transmission were reported to have failed, recently declassified NSA documents have revealed that a translation was indeed achieved. The transmission appears to have been a report by an intelligent civilization about the habitability of our solar system.

Below is the translated report, verbatim: Brief Report of Habitable Worlds in the Stellar System of the Sun and Earth

Since the destruction of our forward outpost in the Quarak zone of the binary star system Kortan (closest translation: Tau-Sagittarii) the search for another habitable planet has intensified here on Morkan (translation: unknown). We have found a relatively new star system in the outer arm of stable zone of the spiral system of Chrontor (translation: the Milky Way galaxy). Morkanian astronomers have dubbed this system Sol (translation: Sun) and the third planet, GS03 (translation: Earth) is of particular interest to us.

Earth had always been of major interest to scientists here at Supon Institute of Planetary Sciences (SIPS) on Morkan. We first stumbled across Earth nearly 23 years ago and having obtained a Level Five — the maximum rating — on the Foundation Habitability Meter, we focussed all our energies on obtaining funding to study and make contact with Earth. We now work on the extensive study of planet Earth and

the possibility of other habitable worlds in their stellar system: the rocky planet GS04.01 (translation: Mars) and three natural satellites of other planets coded GS05.04 (translation: Europa), GS06.13 (translation: Enceladus), GS06.06 (translation: Titan).

The following is a report of the study of Earth, how it obtained its record Habitability Meter Level, and the habitability readings of four other bodies in the system.

GS03 (Earth)

Earth captured our attention first when we noticed its transit period across its host star (called Sun). Its orbit took approximately 365 cycles(translation: days), uncannily similar to our own 385 days. We were also able to deduce that its mass was nearly equal to ours as well, but the gravity was much higher. Earth also has a unique natural satellite (called Moon)

Lenovo.

Lenovo incurs loss

Lonovo reported a net loss of \$714 million in Q2 2015. Apparently this was was better than what was expected: http://dgit.in/LenovoLoss



'Smarter' Watches

Cellular connectivity is all set to be featured in Android Wear says Google. Read here: http://dgit.in/SWcellulr

Space Age

that formed through a giant impact and remained close to the planet, but is in a slow orbital decay. Extensive study of the Earth's atmosphere from our Orbital Telescope showed that Earth had nearly identical atmospheric components as that of our home planet Morkan. Carbon, hydrogen, oxygen, and helium are the most abundant gases in this universe; and it was thus argued that there was a higher probability to find carbon-based life than any other kind. Keeping in line with this mission, we used four main characteristics of carbon life forms to study Earth.

The Fellot Band (translation: Goldilocks Zone): Apart from the fact that Earth is rocky, it was a major find for us that the Earth sits in what is called the habitable zone or the Goldilocks zone — not too hot, not too cold, just right. It's star is the primary source of energy and would sustain everything from the weather to the water cycle to energy for life. Life forms on Earth would potentially be able to suitably harness Sun's energy naturally for sustenance, while protecting themselves from too much heat. The ideal temperature also supports liquid water on the surface.

Atmospheric Gases: Earth was the first body to show positive results for scans of all three major gases that constitute biosignatures – oxygen, methane, ozone. Oxygen on Earth is produced and sustained by plants alone. Methane is an abundant by-product of the biome, especially of the domestic cattle. Ozone in Earth's atmosphere is produced by molecular oxygen combining with atomic oxygen using energy from sunlight or lightning. In our astrobiological quest, we had guite abandoned the idea of looking for each of these gases individually as they do occur naturally, such as molecular oxygen on comets and methane released by volcanoes. However, as methane does not stay in the atmosphere for a long time, we could conclusively say that the constant replenishment of methane in Earth's atmosphere was by biological process. Indeed, the combination of methane with either oxygen or ozone provides for a good case of astrobiology.

Magnetosphere: Just like Morkan, Earth has a rotating liquid iron core which produces a protective magnetic field

that surrounds the planet. This helps in deflecting and protecting Earth from Sun's radiation and solar wind: a stream of high energy particles traveling almost at 1000km/sec, wreaking havoc and causing destruction on the atmosphere of every body it encounters in the star system. We can safely conclude that had it not been for the magnetic field, earth's atmosphere would have eroded away ages ago, killing all life with it. The solar wind colliding with and being deflected by the magnetic field also produces mesmerising aurorae just like on Morkan.

Liquid Water: Finally, we come to what is probably the most important biosignature. Liquid water is important for two reasons: Firstly, water is a universal solvent, which means that it is that it is capable of dissolving more substances

Meter readings:

- Energy: Abundant
- Suitable Gases: Yes
- Magnetic Field: Yes
- Liquid Water: Abundant
- HML: 5

GS04 (Mars)

Being Earth's neighbouring but smaller planet, it has attracted a lot of attention from the natives and for good reason. Mars sits just on the outer edge of the Goldilocks zone and is rocky as well. It has confirmed reports of trickling salt water on its surface. There is barely enough heat from Sun, so it's much colder than Earth and definitely too cold to have oceans. There is a visibly remnant magnetic field. The magnetic field that once existed might have kept the planet warm enough to



Planet G4 would be a great laboratory for studying experimental terraforming

in it than any other known solvent. The greatest advantage to that is that liquid water can transport dissolved minerals from one corner of the planet to another and support life. Secondly, water needs to be in liquid form because solid ice traps nutrients and does not move. Liquid water carries the highest weightage in determining the HML of a body. Liquid water on Earth was first detected by observing the unusually high percentage of water vapour in the atmosphere.

Following the successful detection, observation, and interaction with life on Earth, SIPS now uses identical methodology to provide Habitability Meter Levels (HMLs) on four other bodies in the same star system as Earth. Bodies below are referred to with their local names and the star system is called Solar System.

contain life. Solar wind has since stripped all of its atmosphere away. Present life is most certainly absent, while past life could have existed. The magnetic field loss is still unexplained.

Meter readings:

- Energy: Not enough
- Suitable Gases: No
- Magnetic Field: No
- Liquid Water: Minimum
- HML: 3

GS05.04 (Europa)

Europa is a moon of the largest planet in the solar system coded GS05 ((translation: Jupiter). It has rocky interior but a waterice crust. Its surface is filled with lines and cracks but it is the smoothest object in the solar system. This smoothness indicates

Space Age

Tnder gets new algorithm

Didn't like who Tinder was matching you with? Give your search one more try! http://dgit.in/TndrAlgo



Impressive Imgur!

Read facts and stats about Imqur. a Startup that got people addicted to it: http://dgit.in/ImageurAD

that its surface is young, because bodies whose surfaces don't keep changing have impact craters (like Earth's Moon). A surface change can happen due to plate tectonics and volcanism where the inner material of the planet or moon comes out and forms the new, smooth outer layer.

Europa does indeed have its material from inside forming newer layers of smooth surface outside due to plate tectonics. On Earth, tectonics occur because the core is hot and molten. On Europa, tectonics occur because of tidal flexing. Jupiter and the other large moons, (called Ganymede and Callisto) constantly tug at Europa, causing it to be agitated internally. This releases heat and provides geothermal energy. This discovery of energy also requires SIPS to reexamine the definition and usage Goldilocks zone.

There is evidence of a subsurface liquid ocean of water under the icy crust. The heat from the geothermal activity keeps the water in liquid state. Europa has a magnetic field that is induced by Jupiter's. Furthermore, hydrogen peroxide is abundant on the surface. As hydrogen peroxide decays to molecular oxygen, it could provide necessary support to life. If there is any life, it is definitely restricted to aquatic forms.

- Energy: Adequate
- Suitable Gases: Oxygen
- Magnetic Field: Yes
- Liquid Water: Abundant
- HML: 4.3

GS06.13 (Enceladus)

Enceladus: This is an icy moon of the ringed planet, coded GS06 (translation: Saturn), and is barely bigger than a regular asteroid. It is a suitable candidate for our study for the same reasons as Europa. It is a rocky-ice body with a surface of nearly smooth, fresh, bright water ice. The satellite's biggest appeal is cryovolcanism. Unlike volcanoes on Earth, the ones on Enceladus spew out ice, water, salt, and dust. They are called Plumes.

Just like Europa, Enceladus's heat comes from tidal flexing, but of a different kind. Enceladus is tidally locked to Saturn in a 1:1 resonance, which means that the same side of the satellite faces the planet and one revolution equals one rotation.

Therefore, one side of Enceladus constantly faces more gravitational tug from Saturn than the other side, producing a lot of tidal forces that give rise to subsurface and atmospheric disturbances, causing heat and geological activity.

Naturally, this heat keeps a global subsurface ocean of water in the liquid form and also causes cryovolcanism. Enceladus even contains organic carbon compounds and lies within Saturn's magnetic field. Any life would be confined to the subsurface ocean.

Earth, the primordial soup from which life formed there.

Titan receives a low ranking on the FHM because exploration and study is not in line with looking for carbon-based life forms. Life on Titan would be unusual and exotic, if existent. But primarily, it would be unidentifiable. Organisms that could thrive in the methane lakes would inhale oxygen and exhale methane. However, proposals have been submitted for future studies of Titan as the ongoing expansion of Sun will eventu-



Not very hospitable but Morkonians have been known to survive in worse

- Energy: Adequate
- Suitable Gases: Methane and water vapour
- Magnetic Field: Yes
- Liquid Water: Abundant
- HML: 3.9

GS06.06 (Titan)

Titan is another satellite of Saturn and is the second largest satellite in the solar system. It is bigger than even the first planet in the system. It is the only satellite to contain a thick atmosphere. This atmosphere contains nitrogen for the most part, but it also contains clouds of methane that rain down on the moon. Titan has a full methane cycle like the GS03 water cycle, complete with weather, erosion, wind, and associated surface features. It is the only other body that has can sustain liquid on its surface.

It sits within Saturn's magnetic field for the most part of its orbit and obtains energy due to tidal flexing from Saturn. It is a prebiotic body, meaning it has the perfect conditions for life to form. Our probes have showed conditions similar to theorised early ally make Titan habitable enough to sustain liquid water within a few million years.

- Energy: Adequate
- Suitable Gases: Methane
- Magnetic Field: Yes
- Liquid Water: Possibly sub surface, no evidence
- HML: 2.5

It is our strong recommendation to the Astrosciences Committee at SIPS that the study of this star system continue due to highly favorable conditions on G3. Probes to be dispatched at the earliest.

The above transmission was received from the Chi Sagittarii group of stars in the region of the Sagittarius constellation. Since the successful interpretation of the signal this region of deep space has been under regular scanning but so far, no other signal has been detected. Even more surprising is the fact that none of our telescopes have been able to detect exoplanets in this region. prompting scientists to think that this was probably a message transmitted accidentally in the wrong direction by a moving ship. 🚺

Worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



GOOGLE'S NEXT BIG THING?

Google's Nest, formed by ex Apple employees that has been working on creating a smart home environment. Presenting you almost everything that you need to know about this potentially 'next big thing' by Google http://dgit.in/GqlNest

DRONE RACING LEAGUE

The drone racing league that is emerging as a trend is going to focus on delivering quality footage of the races. The pilots themselves will be getting a live feed from the camera mounted on their drone that will be directly streamed onto their goggles. Beat that F1! http://dqit.in/DroneRcng

POWERFUL THAN A THERAPIST!

Researchers have developed a program that can predict relationship success or failure based on the algorithm and data it has been collecting after listening to conversation of couples' marriage therapy sessions.

http://dgit.in/BtrTherapist

SELFIE! SELFIE!

Now that we have your attention, we go through all the possible phases and aspects of a selfie, the revolutionary potential it has shown, an effort to answer why selfie lovers love it and why haters will be hating it, we bring you in seven chapters, the Selfie Encyclopedia.

http://dgit.in/Selfiepdia

[ArsTechnica Corner]

INTERNET: BY THE PEOPLE, FOR THE PEOPLE



In Orcas Island, lack of a reliable ISP leads to creation of a network by the locals for themselves. The network is powered by multiple radios hoisted on trees and houses, transferring signals across the water just to achieve modern high-speed broadband service. Crazy, isn't it? http://dgit.in/RadioNet



Fall before fly?

Zano, an intelligent drone that also was one of the most funded European Kickstarter project ever bagging \$3.4 million in just two months, just los their CEO. How will they make it? What startup lessons does it teach? http://dgit.in/ZanoFall



Inside the F1 tech centre

Love fast cars? Ever thought how those milliseconds are calculated with precision and how much data goes into processing on the day of the race? Want to see the tech that goes into all of this? Click on the link below: http://dgit.in/F1Tech



New bartender in the house!

Inspired by Rumbot, a Russian hardware hacker has created a robot assistant named Alkomat that is able to mix five drinks at a time serving you the best. Made out of an injet printer, too, would you believe! http://dgit.in/RoboBartender

FLAT DESIGNS: PAST AND PRESENT



Be it Microsoft's Metro III

or iOS introspecting on its interface, or even tech giants like Facebook, Google, Lenovo changing their logos to make them more flat. What is behind flat design. Here's everything you should know. http://dgit.in/FlatDesigns

GPS. THAT HAS BEEN ALWAYS INACCURATE



GIS researcher Peter Rancher with his team

explains why GPS has always been overestimating distance and has been adding extra distance to increase its reliability and still managed to go unnoticed every time! We kid vou not!

http://dgit.in/GPSerror

MICROBLOGGING TO GO SHORTER?



A picture is worth a thousand

words and adding a caption to it is all that is required for your next 'blog' post on image sharing social media websites like Instagram. How are these minimalistic image sharing apps getting into blogging? http://dgit.in/InstaBlogg

THE YOUTUBE 'BOT-KINGS'



Read here, the story of how YouTube

view generating bots are still alive and how a seven second non-sensible video got thousands of views in no time, despite the video sharing's legendary stand on nonorganic views and bots. http://dgit.in/YTVBot

Absentia VR unveils Tesseract 3D HMD at IGX

The device promises conversion of any sort of digital content into 3D, without lag or need for major processing power

- By Jayesh Shinde

t the recently concluded Indian Games Expo (#IGX) in Mumbai, we came upon a stall with no name or number. Quite strange. Its occupants resembled young college kids, all dressed in black T-shirts with "Absentia VR" inscribed on it. Of course, we couldn't see this tiny detail easily, nor their booth. Like a swarm of fireflies attracted to a beacon in the dark, a flood of people had congregated inside the cramped space, each one eager to try out Absentia VR's relatively unknown invention - the Tesseract. Everyone wanted to see "the plane beyond."

A company started by a gang of dedicated BITS Goa dropouts, Absentia VR has created Tesseract - a head-mounted display



for an interactive, immersive, up close and personal experience with moving visuals unlike anything you've ever experienced. Unless you've tried the latest pre-release build of the Oculus Rift (which we have).

From what took about a year from conception to first bootstrapped prototype, Absentia VR's Tesseract is what you would



expect any VR HMD to be. Just like the Oculus Rift, Sony's PlayStation VR, HTC Vive, Gear VR, and other HMD projects that are currently in the works (and slated for release in 2016), the Tesseract looks like a futuristic eyewear straight out of a sci-fi movie. However, its inventors believe it has several unique distinguishing factors that make it more lucrative (for investors) and palatable (for the general audience).

Decoding the Tesseract

The Tesseract HMD is made of plastic with cushioned lining (where it comes in contact with the head) and adjustable straps to mount the unit. It has two dials on its side to individually adjust the focal length of the lens inside (near and far) and on top it comes with an interpupillary adjustable dial to move the two lenses left or right. It has a range of sensors including and not limited to the gyro and the accelerometer. The entire system is powered by USB and an unknown ARM Cortex chip makes it tick.

The Tesseract - currently supporting 1080p and 1440p visuals - made several claims. Shubham Mishra, Co-Founder, Absentia VR, and the captain of this fledgling hardware startup, talked about some of the advantages the Tesseract has over its competitors. Unlike the Oculus Rift and other high-end VR headsets, the Tesseract doesn't need specialised content - it can upscale pre-existing 2D content to 3D without any lag. Their patent-pending algorithm differs with Oculus' implementation. too, claims Shubham and his team - where the Oculus uses predictive head tracking to pre-render pixels, the Tesseract uses smart vectorisation to define the edges and depth of an object in real-time. This approach,



according to Absentia VR, eliminates a hint of drift suffered by Oculus Rift.

Another achievement Shubham and his young team proudly proclaim is the fact that the Tesseract does no extra graphics computation on its part, relying completely on the PC's discrete GPU and resources for all the visual information fed through

CLOUD WARS EXPLAINED



The market for cloud computing refuses to act

according to expectations! Since years Silicon valley giants are trying to make it big in the cloud services space, but just cannot go pass Amazon. What advantages did Amazon get just to enter this space first, everything decoded and explained here: http://dgit.in/CloudWrs

UNSEEN PART OF START-UPS



Promising new technological ideas give birth

to a new startup quite often, but only a few survive till the end seeing the light of the day. Behind the good and bright lies a dark side of startups that has little dirty secrets. Find out more.

http://dgit.in/darkstartup

DON'T INSTALL APPS, STREAM THEM!

Google's latest experiment is to let you use the Android app by streaming it off its servers without installing it on the device. It comes on the Beta version of the Google Search app. Search for an app, and if it is indexed, you will see an option to stream it now! Go check it out.

http://dgit.in/GStreamApp

GET YOURSELF A HOVERBOARD!



Around the globe tech companies are launching new

hoverboards and this is one thing that has spread like a wildfire in a forest! Let it be for going to work or going out for a movie, hop onto one, and go around. Wondering why are hoverboards everywhere right now, hop on and start reading! http://dgit.in/AllAbtHB

its standard spherical magnifying lenses (we estimate) and projected into the viewer's eyes. There was talk of having double Fresnel lenses in an upcoming iteration, but more on that later.

Simulator sickness or the nausea that many 3D VR users experience has been dealt with quite cleverly within the Tesseract. While we didn't really game for hours on end, whatever little time we spent wearing the HMDs, we didn't experience any physiological side-effects that are all too well-publicized elsewhere.

How does Tesseract work its magic?

The answer lies partly in its software. According to Vrushali Prasade, Co-Founder and Software Lead, Absentia VR, "In simple terms, our software converts 2D images / visuals to immersive 3D. We read all the pixels being displayed in real-time and map it values intelligently to create the illusion of depth." The Tesseract's custom software that runs on the host PC to extract frames is capable of reading image back buffers (for a visual scene) and sending that information simultaneously to the HMD as well as the traditional display monitor.

Another intelligent way to reduce nausea is done by black frame insertion and false nose illusion, according to Absentia VR. On the hardware side, Absentia VR's Tesseract incorporates two 9-axis IMUs or Inertial Motion Units as opposed to just one that's found on most generic VR headsets, thereby eliminating visual lag.

The team's software prowess is highlighted by the fact that there's not one, two but three applications that have been developed by Absentia VR to work in conjunction with the Tesseract. Other than gaming the team believes the device has applications in



other domains as well. Industrial 3D walkthroughs, visualising CAD designs in 3D and even experiencing panoramic photos and 360-degree videos which will be getting common on YouTube and Facebook.

It's no secret that virtual reality or VR is one of the most hotly anticipated evolutions of technology making inroads into our increasingly digital lives. The question isn't when as much as it is how and just how good will the experience on offer be. Let's ask the \$350 question, where essentially Absentia VR's and Tesseract's cookie effectively crumbles.

How does the Absentia VR Tesseract compare to Oculus Rift?

If we're talking about performance on a scale of 1 to 10 we'd peg the immersion at a solid 6. The controls to adjust focal length work well enough and we were able to cus-



tomise or tweak the device to three varying head sizes. We noticed a bit of warping of the rendered image and the FOV didn't feel very wide. The algorithm that creates the illusion of depth by varying the sizes of the rendered objects could also use some tweaks to increase depth perception. The head-tracking mechanism was fairly sensitive and we'd give the performance on that front an 8. None of us in the team could detect the adjustment made for the "false nose" which probably means the device likely succeeded in fooling our brains. As for the nausea we didn't try it on for more than 10 minutes at a stretch, so we can't really comment on the long term effects, but for the duration we experienced there wasn't any noticeable discomfort. Call of Duty: Ghosts (the game that we tried it on) looked strictly OK on the 1080p version of the device and while it looked better on the 1440p model, the trouble with this device was that the end of the screen was perceivable at the edge of the periphery of vision - not desirable.

For those of us who don't really have that much time or a bent of mind that's geeky enough to get our hands dirty, perhaps the ₹12,000 (US \$180) Tesseract is a good alternative (once they up the ante of course) at least for the ability to view any kind of content (not just games) in 3D. The 1440p version of the Tesseract is priced at ₹20,000 (US \$300), and currently Absentia VR is taking preorders for a booking price of ₹4,000 (US \$60) and ₹4,500 (US \$70), respectively, for the 1080p and 1440p versions.

Having spoken to the team at Absentia VR - Shubham, Harikrishna, Vrushali, Aditya and others - the Tesseract will next be showcased at CES 2016.

(with inputs from Siddharth Parwatay)

(worldview)

COLDFUSION

ColdFusion videos give vou an in-depth knowledge about various aspects of technology, history and quite a lot of uncategorized



stuff about the world. It tracks where did everything start from and what could be its future. It has various series of which the "Then and now", "How big" are just must watch!

http://dgit.in/ColdFusionTV



To get all these links in one easy to read page, make sure you blip these pages from your smartphone.

(PRODUCT LAUNCHES)

XIAOMI REDMI NOTE 3



TP-LINK AC1900



LENOVO YOGA 700



Xiaomi recently launched its brand new Redmi Note 3. a phone powered by a MediaTek Helio X10 processor with a13MP camera and a fingerprint scanner, Price: RMB 899 (approx. ₹9,300) and RMB 1099 (₹15,500)

TP-LINK introduced its AC1900 router that has a 4.3-inch touch screen panel with 128 ppi that allows you to operate the router, eliminating the need of a connected device to setup. Price: ₹14.000

Lenovo has added the Yoga 700 in its hybrid range offering Full HD multi-touch IPS display, 6th gen Intel Core i7 chip along with 256GB SSD. Optional NVIDIA GT 940M GPU, too.

Price: ₹43.000-₹52.500

PIICTURE PUZZLE



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Historic Rocket Landing Duration: 3 min 13 seconds

A fully reusable rocket landed successfully for the first time ever. A historic moment indeed! Check it out here: http://dgit.in/HRocketLand



Build Your Own Robot Duration: 5 min 24 seconds

A video with the Meccano Meccanoid G15 KS, a computing engine for your own open-source personal robot. http://dgit.in/MMeccanoid



How an atomic clock works

Duration: 4 min 32 seconds

EngineerGuy explains us all about the world's smallest atomic clock and briefly speaks about its working. http://dgit.in/GpsAtmclk





React.js Basics

>>A JavaScript library backed by the largest social networking platform in the world certainly deserves your attention > by Kshitij Sobti

avaScript libraries and frameworks come and go, but with Facebook behind one, you have to take notice; and the world did. React is in active development and already in use by major websites like Imgur, Netflix and Scribd. React is unique, perhaps even groundbreaking, and definitely controversial in a number of ways as you'll discover as you read along.

What is React?

of Buttons etc.

First and most important, know that React is a library that aims to do one thing, but do it well, the UI. To solve other parts of the web development equation, you'll need to look elsewhere.

Also important to know is that React is very fast thanks to its use of a Virtual DOM technology – we'll look at that in a bit. React also heavily encourages you to use

bit. React also heavily encourages you to use an enhanced version of JavaScript that it calls JSX.

Finally React is oriented around components. All you do with React is create a hierarchy of components that work with each other. For instance you could create a toolbar composed of ButtonBars, composed



Is it the next big thing in web development?

JSX: XML-Rich JavaScript

JSX is JavaScript with an enhanced syntax for declaring components using XML tags directly in code – you'll see this in action soon. Since this isn't standard JavaScript, you need to compile to the equivalent JavaScript before it can be loaded by the browser.

This compilation can be performed in the browser itself by including the Babel compiler along with your JSX scripts on your page. The preferred way, especially for production is to compile them in advance.

It's also entirely possible to use React with a pure JavaScript syntax if you want, however JSX is definitely the cleaner, simpler and clearer route. If you do use JSX, you can also begin using the latest JavaScript features and syntax since the Babel compiler will also convert those features to work with current browsers.

The Virtual DOM

The DOM, or the Document Object Model is a convention for rich object-oriented iterations with a document. In case of browsers the DOM is what let's you manipulate the HTML content of a page. The is essentially how JavaScript is able to provide any kind of interactivity.

The problem with it though is that performing a large number of operations on a page can be really slow, especially if done inefficiently. The virtual DOM is the magic behind React's great performance. React

*Coding Matters



*Firefox OS 2.5 Developer

>>Now you can try out Firefox OS without needing to flash it to your phone. A version of the OS is available for Android that can be installed like any other app. http://dgit.in/FirefxOS



*Google Open-sources TensorFlow

Google has open sourced a new machine learning library called TensorFlow. This is the technology behind their object recognition for photos and more.

http://dgit.in/GTensorFlow



*Electron

Electron let's you package your web applications for Windows / Mac / Linux while also allowing you to use native platform features.

http://dgit.in/ElectronPackg



maintains its own fake / mock / virtual DOM in memory where it performs all operations. It then compares this to the actual DOM, and makes the minimal changes required to bring it up to date with the virtual DOM.

By batching these changes React can also ensure that there is no unnecessary rendering of intermediate states that you wouldn't want the user to see anyway.

Setting up a React App

React is composed of two main JavaScript files 'react.js' and 'react-dom. js' that provide the bulk of the functionality. These are all you need to include in your HTML page to use React.

If you want to use the JSX syntax, and want it to automatically work in the browser you need to include the Bable compiler. Your JSX code can be included like any other JavaScript file, with just the type attribute set to "text/babel". This is very useful while testing. We will also include jQuery to simplify communicating with other services.

To quickly get you started, we have created a project with everything set up at http://dgit.in/ReactTutorial. You can click on the Remix button to make your own copy of the project and edit it online. You will see a folder for each step of the project with individual HTML and script files. You merely need to edit the "script.js" file. Here you can also click on the "TUTORIAL" tab for more instructions.

Over the rest of this article, we will be building a React application that uses the OMDb (The Open Movie Database) API to search for movies.

Our First Component

The simplest React component need only a method called render that returns the content to display. For example:

Note how we are directly using an HTML-like syntax to build out UI. We can do this because we are using JSX and the compiler will convert this to pure JavaScript. To see the equivalent JavaScript code, you can type this code into the Babel REPL online at https://babeljs.io/repl/. You'll see how better off you are using JSX for React.

The above code alone will show nothing in the browser. It creates a component that subsequently need to create an instance of to display. This is simple enough:

ReactDOM.render(<Movie />, document.getElementById('content'));

See how we are now using Movie like a tag as if it were any other HTML tag. You can also use this with existing HTML tags like div, span, and a. This is what React is all about. We could also do the above as:

```
var movieInstance = <Movie />;
ReactDOM.render(movieInstance, docu-
ment.getElementById('content'));
```

The second parameter provided to ReactDOM.render is a direct reference to the DOM node where you wish to inject your component. For this to work there needs to be a tag with an id of 'content' in the

body of your HTML document. The project we have set up for you already has this.

Now you should be seeing something on the screen. Next we'll see how we can supply the movie title and year to a movie object rather than having it hard coded. We can do this with properties.

Component Properties

Component properties allow us to initialise a movie component as follows:

```
<Movie title="12 Angry Men" year={1957} />
```

This is again similar to HTML tags except that we are also using curly braces. These allow you to pass variables, numbers and complex data objects. Here by putting "1957" in curly braces we are passing it to the component as a number rather than a string. In our particular case it doesn't matter though.

Now we can modify the component to use these properties rather than hard-coding them:

Any properties you provide are made available via the props object on the component object.

Here you can see how we initialise two different Movie components, and place them in a div:

```
var movies = <div>
<Movie title="12 Angry Men" year={1957} />
<Movie title="Donnie Darko" year={2001} />
</div>;
```

ReactDOM.render(movies, document.getElementById('content'));

Properties allow you to pass data and configuration to components but it's very important to note that these properties are never supposed to be modified by the component. React components have a different mechanism, called states that are designed to be modified by the component.

Component State

To show how we can use states, we'll create a simple component that toggles between an empty and a full star. This can be useful to mark something as favourite or important.

This component will need a state called starred is toggled whenever it is clicked. In react the way to do this is to set up the initial state using the getInitialState method, and then modify the state using setState.

```
var Star = React.createClass([
  getInitialState: function() {
    return {starred: false};
  },
  star: function() {
    return this.state.starred ? "\u2605" : "\u2606";
  },
  handleClick: function() {
    this.setState({starred: !this.state.starred});
  },
}
```





If you look into the actual DOM at this point you will see a lot of the stuff that react has added to keep track.

render: function() { return (<div onClick={this.handleClick}>{this.star()}</ div>); } });

ReactDOM.render(<Star />, document.getElementById('content'));

There is a lot going on here, so let's break it down.

The getInitialState method of Star returns the initial state of the component. The render method is a simple div that has a click handler which we have bound to the handleClick method, and the body of the div is returned by the method star.

The handleClick method is simple. It just toggles the starred state between true / false. Using setState causes the component to automatically be re-rendered with the new state.

The star method returns the Unicode symbol for a full star or empty star based on the starred state variable.

We also render the Star component on the page. This should display a single empty star that toggles between full / empty when clicked.

You could now include <Star /> in your Movie component and get this component as part of the Movie component. Right now this isn't useful because the Movie component doesn't know the state of the star. This problem is fixable and hopefully when you're done reading you'll know how.

Right now though let's start by creating a MovieList component.

MovieList Component

While our Movie component takes a single movie and renders it, the MovieList component will take an array with data about many movies and render each using the Movie component:

var MovieList = React.createClass({ render: function() { var movielist = this.props.movies. map(function(item) { return (

pointers

>>Interesting developer news



*What if the user was function?

>>This great talk examines a new way of looking at user interaction by abstracting away the user itself as a function

http://dgit.in/UserFn



*Sarcasm Detection Using Python

>>Are you bad at detecting sarcasm? Now let your computer help you out by building a sarcasm detector using Python.



*Robots Running **JavaScript**

>If you like Robots, and you like JavaScript, this talk is a must watch as it explores NodeBots, Robots that run on JavaScript

http://dgit.in/NodeBots



*Rethinking Web App Development

>>This talk by a Facebook developer introduces the Flux architecture for building web applications.



<Movie title={item['Title']} year={item['Year']} />); }); return ({movielist});

});

In the render function this component uses the Array map method to create a Movie component for each movie data item. The reason we have the movie title set to [item['Title']] is that, that is the format in which the API we are using returns data.

The final two piece in our puzzle is a search box that we can use to perform queries. However we well also need some way to connect everything together. For that we will create vet another component, for our main app.



Once you know enough react, you could link together five star components to create a ratinas widaet.

The SearchBox Component

This is another simple component, but it introduces some new concepts that you will find useful. Let's have a look:

var SearchBox = React.createClass({ handleSubmit: function(e) { e.preventDefault(); this.props.queryChange(this.refs.query.value); }, render: function() { return (<form onSubmit={this.handleSubmit}> <input ref="guery" /> </form>); } });

As you can see from the render function, this component returns a simple form with just a single text input field. What's going on under the hood though is a lot more interesting.

Let's start with the render method, where you'll notice that we have added a refattribute / property to the input element. You'll also notice that we have set the handleSubmit method as the submit event handler for our search form. This method will be called when someone enters some text in the input box and presses enter.



The handleSubmit even handler itself first uses the preventDefault call to stop the browser from triggering the default form submit action, which would refresh the page.

When you add a ref="name" property to an element in the render method, it allows you to quickly get a reference to that property using this.refs. Since we gave our input field a ref of "query" we can now access it as this.refs.guery.

Here we are obtaining the value of the input field, and passing it to the queryChange function that seems to be a property as it is available in the this.props object.

What this means is that when we create an instance of this SearchBox component, we will need to provide a function via the queryChange property. This function will then by called when the query changes, and will be provided the query string.



Instead of listening for form submits, you can listen for text change events get live search results.

}); The render function is quite simple thanks to

}

our existing components. It simply includes the SearchBox and MovieList components. The query-Change property of the SearchBox is bound to the handleQueryChange method of our component and the movies property of our MovieList is bound to the data stored in our state.

When someone submits a query using our SearchBox component the handleQueryChange method is called. This method is provided the submitted query, and this method in turn uses the OMDB API get the movies matching the query.

Here we are using jQuery's convenient Ajax APIs to perform the guery. The OMDB API returns a JSON document with a single Array called "Search". Here we extract that array and use set-

State to update the data to be displayed by our component. Using setState to change the data automatically refreshes our component with new data.

At this point you have a fully working React-based application for searching for movies using the OMDB API and displaying the result.

Connecting Everything

Now we need to create one final component that will connect everything together. Since we've already done a lot of the heavy lifting inside the application, the main app is quite small:

```
var App = React.createClass({
getInitialState: function() {
 return {data: []};
},
handleQueryChange: function(query){
  var url = "https://omdbapi.com/?type=movie&s=" + query;
  $.get(url, function(data) {
   this.setState({data: data['Search']});
 }.bind(this));
},
render: function() {
  return (<div>
       <SearchBox queryChange={this.handleQueryChange} />
       <MovieList movies={this.state.data} />
      </div>);
```

Next Steps

Hopefully you've seen how easy it is to combine different components in React to work together and create complex UIs, and how easy it is to reuse the components you've made.

React's component model is generic enough that it is also usable for building native applications with React Native and graphicsdriven apps with react-canvas.

Of course with the Virtual DOM being a core part of React, you can also expect better performance that most other similar UI libraries and frameworks. In fact since the DOM is virtual, it's even possible to render React components to HTML on the server side.

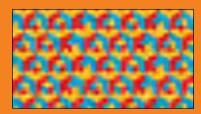
To find out more about React, you can visit: https://facebook. github.io/react/_You can also learn about the OMDB APIs we have used in our project at: http://omdbapi.com/

bread crumbs



*React Router

>>Now that you have your components set up using React, are you looking for a router to handle navigation within your app? What you need in react-router http://dgit.in/ReactRouter



*React Art

>>React is powerful enough to work with other models that the DOM, and this is a good example of how react can be used with the

http://dgit.in/ReactArt



*Flux

>>Flux is another Facebook creation that aims to be a modern application architecture for apps built using React http://dgit.in/FbFlux

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Nikhil Punjabi & Ashish Panigrahi readersletters@digit.in

ore and more first-time users of technology are experiencing the Internet, online services, digital communication, and some of the other privileges we take for granted, through smartphones. And unlike desktop PC users who are already aware of having a security suite installed on their Windows PC, smartphone

users are largely unaware of the threats persisting online, and the fundamental need for security solutions for their smartphones or tablets. Through this short comparison, we try to bridge this knowledge gap.

You just have to try googling for "smartphone malware" and the number of alarming news reports from respectable media sources and private security firms commenting on the rising trend of smartphone malware is evidence of the malaise gripping the smartphone industry. Every other week, reports of a new Android malware affecting hundreds of thousands (if not millions of) devices is common place. At stake is not only your sensitive data but other financial information, not to mention your personal identity, if you don't take preventive steps to minimize risks and avert disaster.

What choice do consumers have? Apart from inculcating safe browsing habits, you should install a mobile security app on your phone. We tested three of them in this comparison. What we found is apart from safeguarding us against unwanted malware or digital snoops trying to steal our private data stored on our mobile devices, these security apps offer a lot more. From optimizing your device to protecting your web browsing session, parental controls to saving your passwords in encrypted format, mobile security apps are getting more versatile to appeal to a vast swathe of consumers. Let's see how they stack up.

Mobile Antivirus Apps

Windows 1.0 to 10!

Its been 30 years in November 2015 since the launch of Windows 1.0. Read more here: http://dgit.in/Win1to10



Digital Break-Up!

Facebook now lets you limit or hide completely what you want to see of your ex partner after a breakup! http://dgit.in/FbBrkup



PERFORMANCE

NORTON

uring our scans, Norton performed best by detecting almost everything we threw at it almost instantaneously. A full scan took about 25 seconds but seemed to scan only apk files even though the parameter was set to include SD card for scanning as well. During the tests for web protection, it detected the malicious website itself and blocked it which others failed to do so. Credits to the Norton community? Except for the first test on that website, it did block all the others. Parental controls can be added onto with installation of the Norton family app which in itself is really strong when it comes to protection and control. What disappointed us was that Norton even after clearing our web protection with maximum points, did not block spam banners and ads on the websites. During all this activity, it consumed about 160MB when running in the foreground and performing scans and around 50MB when running in the background. Quite light on resources we must say.

Performance

Price	₹580
Wicar Test Score	11
Battery Consumption	2%
Foreground RAM	160 MB
Background RAM	50 MB

KASPERSKY

🕇 n our comparison, Kaspersky **⊥** was the only contender to offer options of Quick scan, Full scan and a Folder scan. In our tests, on an average, Kaspersky took 41 seconds to do a quick scan of all apps whereas a full scan took about 9 minutes and 30 seconds. It was quite thorough as far as client-side scanning was concerned.

However, in spite of having various options, it failed to offer the ability to scan a single app. In our browsing test, quite surprisingly it failed to block any of the harmful websites and packages we downloaded which were marked malicious by other softwares in the comparison. On the whole, except for the scanning, we couldn't see Kaspersky 'Internet security' performing what it was supposed to. It was quite thorough when it scanned for files and was also relatively low on RAM usage when the app ran in the foreground - which is especially good news, considering if you're running this on a sub-10k smartphone.

Performance

Price	₹599
Wicar Test Score	0
Battery Consumption	2%
Foreground RAM	110 MB
Background RAM	83 MB

TREND MICRO

n the primary scans, by default the Trend Micro app scans just for malware or harmful or infected apps nothing more, nothing less. You have to manually go to the settings and switch on scanning for the SD card so it scans all the files on your phone. By default an automatic full phone scan would have been better.

In safe browsing test, it performed quite well blocking almost all malicious links but failed to trap the ad banners or pages that display spam popups. If parental controls are set well, it does block unsuitable websites that are suppose to be blocked - we did scratch our heads as to why this wasn't enabled by default. During our testing, its RAM consumption udring full phone scanning was above 200MB every single time whereas once the app was stopped and just ran in the background, it was the app that consumed just about 20MB at any time. Quite a resource hog, we must say. Not desirable.

Performance

Price	₹349
Wicar Test Score	9
Battery Consumption	5%
Foreground RAM	222 MB
Background RAM	18 MB

HOW WE TESTED

Initial setup:

All security apps to be tested are first examined for supported system requirements. We only tested out the mobile versions of the antiviruses. So for testing we selected the iPhone 4S running on iOS 9.1 and OnePlus 2 running on modified Android 5.1 Lollipop as the two comparison models. We then setup the required devices on which the antiviruses are to be tested, as per the company specifics on which the antivirus apps are downloaded and installed. We also installed any company released update and test the new fixes available.

Performance tests:

We conducted a whole series of real world tests on the devices to measure the impact of every aspect of the antiviruses on overall performance. These tests include scan time tracking by a stopwatch, battery & RAM consumption (both foreground and background monitoring) from internal resource monitors for 15 days. We conducted Wicar's test, which is a Windows based test on the mobile devices for real-time protection testing. In this test we downloaded malware payloads to the devices to test if the antivirus blocks it or not. Results were carefully catalogued. The final performance score is the weighted sum of all the scores catalogued. Weights are assigned based on the perceived importance of every aspect of the app's performance.



Living with 16GB

Stuck with a 16GB or a phone with limited storage? These tips might be useful! http://dgit.in/16GBmemory



Migrating to Windows phone?

After launching upgrade tools for windows, Microsoft now launches new upgrade to windows phone app! http://dgit.in/MsAppComprsn

Mobile Antivirus Apps







FEATURES

NORTON

orton comes with a power packed security app that includes an App advisor that will give you warning about the apps that are installed on your device. It can also integrate with Google Play store where before installation it scans and gets data from the Norton community that gives information about the security issues and risks the app may carry while installation. It provides you protection from malware by scanning your phone which can be scheduled as well as provides complete web protection. Like all the others, Antitheft feature comes bundled with the pro version of the app. Further, it allows you to backup your contacts online and also block spam calls onto the device setting up a filter list. In stark contrast to its Android app, the app's splash screen on iOS appears ancient, and features are also curtailed. Just two basic features along with Safe ID app that has a tight security with non-recoverable password protection. There's a safe browser built in, too.

Features

App availability iOS and Android	
Phone TrackerYes	
License TransferYes	
Password ManagerYes	
Cloud StorageFor contacts only	

KASPERSKY

\\ /ith addition to the in-built anti-malware protection that is provided with every anti-virus (quite obviously!) Kaspersky gives you web protection for safe browsing, Anti-theft features like locate, lock, make your phone ring, take mug shots from the front camera and wipe. In case your phone is not connected to internet, you can send a SMS from the app installed on another phone. While testing the Anti-theft features, the phone we used had a hardware alert slider. When the phone was made to scream, it could be muted from ringing if switched to no interruptions mode with the physical slider. Similar was the case with the lock feature. Kaspersky also adds an extra layer of protection and filters calls and text messages for you that may be spam. It also has the ability to hide selected contacts, logs, messages etc. What we particularly like here was that you can schedule scans and let it work accordingly without you have to do it manually every time. No app for iOS.

MASI ENSINI

Features

App availability	Android
Phone Tracker	Yes
License Transfer	No
Password Manager	Yes
Cloud Storage	No

TREND MICRO

rend Micro comes with a really powerful and feature loaded app that offers more than anyone else here. Along with really good anti-virus scanner for your phone, Trend Micro also promises to keep your browsing safe and block malicious content to provide complete security. It has a powerful parental control feature with a lot of versatility. The anti-theft features include options to lock, wipe, make your phone ring, locate and even make its location post on your Facebook. A very interesting feature that Trend Micro offers that made us say it wants to be a mile ahead in offering features is its system tuning options from the app itself. Trend Micro has system tuning features like an app manager, a battery optimizer with different modes like 'just a phone', 'smart saver', etc, and switches them on automatically when the battery is low. The iOS version had browser, direct access to FB and Twitter for anonymity, lost phone tracker, and data usage caps.

Features

App availability iOS and Android
Phone TrackerYes
License TransferYes
Password ManagerYes
Cloud StorageYes

HOW WE TESTED

Features score:

The features present in each antivirus are tabulated and given weighted scores depending on perceived importance. For example, real-time protection and anti-theft features will be given more weightage over parental control, and so on.

Design and Usability:

The scores for this parameter are largely subjective as they indicate our experience with the antivirus. Items such as ease of product activation, ease of web scanning, overall user interface look and feel, etc, are weighted and scored here.

Final score:

The final score that we arrive at is the sum of the performance, features, and design and usability scores with a 50%, 40% and 10% breakup respectively.

Understanding winners:

The Best Buy antivirus is awarded to the device with the best price to performance ratio based on a predetermined formula. This is the ideal, value for money product in the test. The Best Performer Award is awarded to the device with the highest overall performance score. The Editor's Pick award is awarded to the device that we feel has a lot of promise but misses out on the previous two awards narrowly. The Editor's Pick award is slightly more subjective, we confess, as compared to the other two awards.

Mobile Antivirus Apps

Google

Google steps up

Google wants to get serious in cloud computing and here is all it is doing to achieve more. http://dgit.in/GCloudHire



More Pink now?

After iPhone and Apple watch, Apple to launch Beats headphones in Rose gold colour now. http://dgit.in/BeatsRG







DESIGN AND USABILITY

NORTON

edesigning its layout from last year, it has a very clean and minimal look. The first screen shows the status, pulling that down will start a scan. Swiping to the left gives you the app security screen and swipe more to browse through screens of Web protection, System tuning features, license screen etc.

During testing the Anti-theft features, it seemed to locate the phone guite accurately and the other options to send SMS commands, lock, wipe, take a sneak peak, ring etc. performed as configured, too. Similar to others, Norton can be given device administrator rights to prevent from uninstallation by anyone.

KASPERSKY

oming to its design, we ✓ really loved the interface, minimalistic but not losing out on shortcuts on the same time. It has the phone status indicator on top that takes up almost all the screen followed by just three mini icons providing options of scan, update and browser. But, when you pull up the menu it reveals more such options and settings for you like phone tracker, call filter, etc. The call and text filter was only supported for Android 4.4 or below. To safeguard against unauthorised use it offers unique features. Basic safe browsing and adblock ability need to be fixed as they didn't seem to function very well.

TREND MICRO

ome screen of this app is like a menu showcasing all the functionalities it has to offer.

Most of the features either work in background and alert vou only when they need attention. You may want to hide the notification icon from within the app as Trend Micro creates notifications just about anything and everything. The privacy scan results showed widely used apps like Instagram, Snapchat affecting my privacy issues.

Something interesting that we came across while using this app is the feature to merge accounts and transfer licences across platforms and across different email ids. Very unique.

ANDROID Vs. iOS

e tested both Android and iOS version of the security apps. We couldn't help but notice the limited app support as well as features on the iOS platform. In Android where there was option to select between deep scan and quick scan, iOS doesn't even have a basic scan functionality. While the Android app suggested ways to optimise your mobile for maximum performance, iOS suffered from lack of a single integrated UI. For iOS even the activation of the apps made us scratch our heads in frustration, because the process couldn't have been any more difficult. This all can be considered power of a fully optimized OS, which Apple is so confident won't need any third party apps to optimize or the reluctance of developers to develop antiviruses for iOS. But breaking the Apple belief that they have it all, this comparison is an evidence that Apple's platform is too restrictive.

VERDICT

he Best Performer Award goes to Norton Antivirus for Android. The total scan time





was quite low and it did pretty well in our real-time protection test and scores were a good





TREND MICRO

PROS:

- License Transfer
- System Tuning

CONS:

- Resource hungry
- · Weak web scanner in iOS

indicative of this result. Also, Norton was the only antivirus to provide very comprehensive parental control options via the Norton Family PC client.

The Best Buy Award goes to the Trend Micro Antivirus for Android as it offers the most features and ease of access out of all the three. It loses to Norton just by a margin on the performance scale, as it is a little heavy on the resources.

Kaspersky for Android was nowhere near the performance

mark of its other two counterpart. On the feature side, the first major issue was the non-availability of iOS app. The other two apps, however minimalistic, had an iOS app. Then, the availability of a call & text filter only for devices running Android 4.4 & below didn't make any sense to us. All in all Kaspersky managed to impress us based on its UI alone, but it was too little.

We refrained from awarding anvone Editor's Pick because we tested just three products.

NORTON

PROS:

- App advisor
- · Light on resources

CONS:

- No system tuning
- No support for free version

डिजिट अब हिंदी में

देश का सबसे लोकप्रिय और विश्वसनीय टेक्नोलॉजी वेबसाइट डिजिट अब हिंदी में उपलब्ध हैं। नयी हिंदी वेबसाइट आपको टेक्नोलॉजी से जुड़े हर छोटी बड़ी घटनाओ से अवगत रखेगी। साथ में नए हिंदी वेबसाइट पर आपको डिजिट टेस्ट लैब से विस्तृत गैजेट रिव्यु से लेकर टेक सुझाव मिलेंगे। डिजिट जल्द ही और भी अन्य भारतीय भाषाओं में उपलब्ध होगा।



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INSIDE

Bazaar

THE LATEST PRODUCTS REVIEWED FOR YOU

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests and is finally given a score. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and, in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score





Extremely poor product.

Keep away!





Strictly OK.

Not recommended





Decent product.

Go for it, but there may be better products out there.





Very good product. Highly recommended.

91 to



Ground-breaking product.

We've never seen anything like it before. A definite must buy!





& M O R E . . .







DOWNLOAD BLIPPAR APP





▲ Page **103** Javbird X2

Protection Rating

The verdict is out of the companies, for how good they are at protecting their customers privacy rights. http://dgit.in/RatingCos

Bazaar

Apple iPhone 6S Plus

Offers best in class performance at an insurmountable premium

n terms of looks and design, the iPhone 6S Plus is almost exactly similar to last year's 6 Plus. It has a new sturdier aerospace grade aluminium alloy to not only safeguard against last year's bendgate fiasco but also to up the reliability game several notches in light of new embellishments (re: 3D Touch). As far as design and looks go, the 6S Plus radiates understated elegance, capturing a minimalist yet premium look. It feels nice and chunky to hold, unlike some of the razor thin, size-zero phones out there.

However, given Apple's own unforgiving design standards, we absolutely hate the camera bump on the rear panel. Also, it's time for Apple to incorporate a (software or hardware) back button anchored to the bottom-bezel as larger-screened iPhones (like this one) flounder with single-handed use.

A much touted feature of both the 6S and 6S Plus - 3D Touch - is a bit of a hit and miss in its current state, and no we aren't doubting Apple's product engineering skills or its ability to drum up 3D Touchsupported apps within the ecosystem. Apart from Mail (which truly wows you with Peek and Pop), Camera app and a couple of supported games, there's hardly any useful software-side implementation of 3D Touch that fundamentally changes the way in which you interact with the screen. Apple's Taptic Engine works well in tandem with the 6S Plus' cover glass, which Apple claims to be the sturdiest in the industry, distinctly letting you realize the difference between a soft (Peek) or hard (Pop) press. What's more, 3D Touch's sensitivity can be customized to your tastes as well. If you're an iPhone 6 or 6 Plus user wondering if life sucks without 3D Touch, don't fret overmuch. You're good till iPhone 7.

In terms of performance, the iPhone 6S Plus blows past the competition. While compared to the Samsung Galaxy Note 5 – the overall best performing Android smartphone at the moment – the iPhone 6S Plus offers more than double in terms of graphics performance. It also offers very good single-core and multi-core results, delivering best in class mobile gaming experience and multitasking capabilities that are right up there among the best.



While extra battery life is a perennial want, the iPhone 6S Plus continues to

impress – we managed to eke out 15 hours of battery life from the 6S Plus (at 25% screen brightness) with constant 3G connection, Apple Watch paired on Bluetooth, with moderate social media and music. Onboard sound is delightfully loud on the iPhone 6S Plus, comparable to the output of some laptops we've tested recently, which is quite an achievement. Although not as ubiquitous as Google Now, Siri is vastly improved with some new tricks, adding to her general allure. Lastly, Apple's iOS 9 beats at the heart of the 6S Plus, stitching together a seamless experience that you need to see to believe. This unique marriage of hardware and software gives Apple the edge against its competitors.

All things considered, the iPhone 6S Plus is a great premium smartphone with best-in-class performance. iPhone 6, 6 Plus users don't really need the update, but for everyone else, the question posed in front of you is this: Are you willing to spend between ₹64k to ₹92k for this luxury device? We just can't wrap our heads around this reality distortion field. If you can, great, definitely go for it.

Jayesh Shinde





Features	81
Performance	91
Design	91
Value	51

Specifications

Display: 5.5-inch, Full HD IPS LED-backlit, with 3D Touch: CPU: Dual-core A9 chip with M9 motion coprocessor; RAM: 2GB LPDDR4 | GPU: A9 GPU; Camera: 12MP (rear) with OIS & 4K video, 5MP (front); OS: iOS 9: Wireless: Wi-Fi 802.11ac, Bluetooth 4.2, NFC; Storage: 128GB (also available in 16GB & 64GB models); Colours: Silver, Gold, Space Gray, Rose Gold; Weight: 192g; Connectors: 3.5mm, Lightning to USB cable, power adapter: Earphones: Yes, Apple EarPods

Contact

Apple India Pvt Ltd Phone: 91-80-4045 5150 Email: NA Website: apple.com/in/en

The New Aim!

Google Says 'The mobile internet is very slow', so the new AMP Project very slow', so the new AMP Project. http://dgit.in/AMPProject



LG 55 inch 4K OLED TV

Along came a giant





he OLED panel allows LG to completely turn off pixels, thereby achieving true blacks and almost getting rid of motion blurs. Colours on this TV are a tad on the warmer side, but it's the kind of warmth that most people like. In addition, the TV has no visible motion blur, which is good, especially for gamers and those who watch a lot of



Picture Quality	92
Audio	64
Design	82
Value	78

Specifications

Model: 55EG9600: Screen: 55 inch UHD OLED; Engine: Quad-Core processor; 3D: Yes, Passive; Remote: Yes, LG Magic Remote; Connectivity: WiFi, USB 3.0 and 2.0, HDMI, LAN, Component: Weight (without stand): 15.2kg

Contact

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Email: Enquiry filing on website Website: www.lg.com/in

fast paced action, like sports etc. on their television.

If you thought the 1100:1 contrast ratio of the Samsung SUHD TV was good, then try the LG's 81330:1 on for size. It also delivers a white point of 6900K, as close as we've ever got to the desired 6500K. The only real drawback of this TV is that the Harman Kardon speakers aren't loud enough and neither is the sound quality very good.

Added to all this is LG's WebOS, which is one of the smoothest TV UIs out there. It takes a while to get used to the magic remote that comes with the TV. It basically functions as a mouse does on a PC, but instead of a mouse-pad you just move it around in the air to move the cursor on screen. It's not quite as easy as Sony's Android TV touchpad, but it's still quite good.

Of course, the TV is a novelty for now, but it's without a doubt the best in the market at the moment. We'll be testing it more to figure out burn in and brightness reduction issues, if any.

Prasid Banerjee

Meizu M2

The new kid is here to stay

e at Digit have reviewed two Meizu phones thus far and both of them turned out to be rather good, much to our surprise, to be completely honest. So, when we got the Meizu M2 this time Price ₹6,999 around, the hopes were certainly high. In terms of design. the Meizu M2 is built from the same materials and feature a similar framework to the Meizu M2 Note which we reviewed earlier, albeit in a smaller 5-inch body.

The M2 uses an IPS LCD panel which has good colour reproduction and is viewable in almost all lighting conditions. The phone's UI is nothing new as FlyMe OS is quite simple to use but requires a bit of getting used to. The phone comes with a Mediatek 6735 SoC which serves out a commendable performance. It is better than



Features	77
Performance	77
Value	56
Design	81

Specifications

SoC: Mediatek MT6735; RAM: 2GB; Internal Storage: 16GB; Display: 5-inch 720p: **OS:** Android 5.1 Lollipop; Battery: 2500mAh

Contact

Meizu India

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most phones in the sub-7k category. Meizu has done a good job at optimising the chipset which is able to perform well without any complain-worthy heating issues.

Like the chipset, Meizu has managed to optimise the 2,500 mAh battery as well. In our normal battery test, the phone was able to hold its charge for just around 9 hours making it a very efficient competitor. A 13MP camera on a ₹6,999 phone, well that's new, something we don't see every now and then. So, is it any good? The short answer to that is, "YES". The camera is able to capture plenty of details and maintains the colour and composition of the subject well. Going over everything, it is quite accurate to say that this is the new best phone in the sub-7K category, and definitely worth considering if you're in the market for a budget phone.

Hardik Singh



Sony dusted Microsoft

Sony continous to gain momentum in the console market. Recent stats support the fact. http://dgit.in/Sony1Up

Bazaar

OnePlus X

X marks the spot?

an design trump specifications in the Indian market? The OnePlus X may be the first phone to take that question head on. It costs Rs. 16,999 and takes a completely different turn OnePlus has been doing so far. If the OnePlus 2 and OnePlus One strived to bring the most jaw dropping specs to price ration, the OnePlus X has one focus, and that is design.

It has glass on both the back and front, and a metal frame to boot, which together provide a very premium look and feel. The OnePlus X's strength though, is also amongst its weaknesses. Firstly, glass on both sides means there's more to break. In addition, the rear panel is also quite fingerprint sensitive. The good thing though is

that the OnePlus X is a 5 inch phone done right. It's only 5.5 inches tall, which is about the same size as the iPhone 6S. So, if you're a compact phone lover, this would be the best device for you.

While many smartphone makers today go for AMOLED displays, for OnePlus X, this is more of a design choice. The AMOLED has one task here, and that is to deliver the deepest blacks that it can. It makes the display blend into the bezels, making the phone look and feel that much better. In addition, the FHD display is sharp enough and the colours pop.

Another strength of the OnePlus X is in its camera. The 13MP camera on the back does really well in terms of colour reproduction, shutter response and speed of focus, but lacks details. Unless you're in the habit of zooming into your images, this shouldn't matter to you, and the colour reproduction and other pros of the camera really do make up for the lack of details. To make it easier, the OnePlus X has a better camera than the Meizu MX5 and the OnePlus One, and is really close to what the Moto X Style can provide.



On the battery front, the phone has a 2525 mAh battery, which on regular usage can last you for about 10-12 hours, depending on how often you use the battery saver modes. On heavy usage, with more gaming than usual, the battery lasted us for less than 7 hours. While this is fine for day to day functionality, since you would usually get to charge the phone at least once every 10 hours, we still wait for the day when Android phones can last at least a full day.

Lastly, the elephant in the room. The OnePlus X runs on the Snapdragon 801 SoC, which though good, is massively outdated now. This means that you phone isn't future proof. For example, the Snapdragon 801 isn't a 64-bit capable processor, which means that it won't be able to take advantage

of Lollipop's 64-bit computing capabilities.

While the processor does provide good enough performance for day to day usage, you would ideally want a newer processor on your device. Also, the OnePlus X is prone to some stutters and crashes, which are because of the still buggy OxygenOS.

Another issue with the OnePlus X is that it has 16GB of internal storage. Even though you get 128GB of expandable storage, Android phones today need at least 32GB of internal storage. With things like music and movie streaming, an SD card can hamper the overall performance of a phone, and 16GB is just not enough storage for a phone to last long enough.

All in all though, the OnePlus X is a good phone, meant for those who have a sub-20k budget and want a phone that looks and feels good. It's all about the design here, and as long as you're fine with the older SoC and low internal storage, this smartphone should suit you well. If you want more storage though, the Moto X Play has a slightly better camera and comes with 32GB of internal storage. It doesn't look as good though.

Prasid Banerjee







Feature	75
Performance	65
Design	87
Value	67

Specifications

Display: 5 inch FHD; SoC: Qualcomm Snapdragon 801; RAM: 3GB; Camera: 13MP rear, 8MP front; Storage: 16GB expandable to 128GB; Battery: 2525 mAh

Contact

Phone: 0008008522008 Email: support.in@ oneplus.net Website: http://www. oneplus.net/in **Bazaar**





New Router Launched

Digisol launched a new router at a street friendly price. Read on for other specification details. http://dgit.in/Digisol

Honor 7 A honourable phone



he build of the Honor 7 is premium and very good. The good old candy bar form factor combined with the aluminium build makes the device not only look premium but feel premium as well - which is quite an achievement given the device's price point. The smartphone has the Emotion UI 3.1 and it lists icons on the home page like iOS and doesn't house an app drawer. The UI is customizable which means that you can have a variety of themes and skins on it. Overall, the performance of the smartphone is very smooth. The fingerprint scanner works brilliantly, as good as the Nexus Imprint - which was a pleasant revelation. You can also use the fingerprint scanner to bring down the notifications menu



and enable other shortcuts.

Features	85
Performance	78
Design	83
Value	71

Specifications

Display: 5-inch 1080P display; Processor: HiSilicon Kirin 935 OCTAOcta-Core CPU: RAM: 3GB RAM: Storage: 16GB: Camera: 20MP rear and 8MP front; Battery: 3100mAh

Contact

Honor India **Phone:** 18002096555

Email: service.hw.in@huawei.com

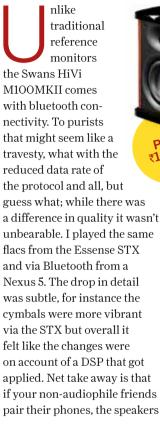


When it comes to calling, it just works and that's a very good thing. The volume isn't too loud even at full volume. The smartphone has an IR blaster that works well with universal remote apps. Coming to other everyday use like reading text, browsing the web, social media, and more it worked well. The battery life of the smartphone is good too lasting one day of heavy use. A flash accompanies both the cameras. The rear camera takes some brilliant shots in well-lit conditions. In low-lit conditions, you will see a notification, which says processing and its worth the 1 second wait as the images produced are really good. All things considered, this is a very good handset for all those who don't want to join the OnePlus line.

Sameer Mitha

Swans HiVi M100 MKII

Precision and modern day connectivity





Build	85
Performance	85
Features	80
Value	75

Specifications

Drivers Configuration: 4" woofer, 0.8" tweeter; Frequency Range: 60Hz-20kHz; Sensitivity: 82dB (2.83V/1m); Nominal Impedance: 6Ω: Rated Power: 2x 30W RMS: Frequency Range: 60Hz-20kHz; Dimension (W×H×D): 7.3"×8.4"×8.5"

Contact

Pristine Note Phone: 022 - 65611833 Email: support@pristinenote.com



will reproduce better audio than they would normally be accustomed to.

How do they perform otherwise? The clarity is quite impressive and I was especially impressed with the dynamic range. The speaker set performed particularly well on pinch harmonics with some of our guitar driven test tracks. For bass heavy tracks I have a mixed opinion. The crunchy bass line on Strip The Soul (Porcupine Tree) sounded phenomenal - every note strong and noticeably accurate. With the M100MKII vou'll be able to tell one distinct bass note from another unlike that overall voluminous hum that passes off for good bass these days. Having said that, I found the lows on Angel (Massive Attack) didn't In effect, it's not a brickbat against the M100MKII but iust a defining trait of the bookshelf speaker category. The midrange was accurately represented as well. Overall, the HiVi M100MKII is an excellent option (much like the A2) if you are in the market for high fidelity desktop speakers. The audio precision they offer is not usually encountered.

Siddharth Parwatay

Action Camera with LTE

The Sioeye Iris4G is the new addition to the action camera line up with LTE conenctivity for live streaming! http://dgit.in/iriscam4g

Bazaar

Sony Xperia Z5

The elegance of fallen grace

he Sony Xperia Z5 is typically Sony superlative build and design, with a dash of class. It stands for everything that Sony has been renowned for, which, also (unfortunately) includes devices that are good individually, but fail to justify their sky high prices in this massively competitive market.

To begin with, the Sony Xperia Z5 has been designed supremely well. Smooth, flowing design, an impeccable build with the buttons placed just right for one-handed usage, sealed flaps for waterproofing, frosted glass at the back and a brilliant IPS panel LCD display on the front. The frosted glass on the back looks really nice, and using glass in entirety but keeping fingerprints away is something that probably only Sony can do.

Coming back to the display, the 5.2-inch LCD display, with a resolution of 1080x1920 pixels, is one of the best out there today. Sony's knowledge of producing excellent televisions has trickled down to its flagship smartphone, and what you get here is a display that has sharp, crisp colours, a marginally warm overtone, fluid operations and brilliant touch response - all of which combine to make movie-watching and gaming a joyous affair. To add perspective, put a 2K resolution display beside it, and the Xperia Z5 will easily put it to shame.

This, in turn, brings us to three aspects - performance, battery life and audio. Powered by the infamous Qualcomm Snapdragon 810 chipset, the Sony Xperia Z5 is a beast when it comes to daily tasks as calling, messaging, browsing, IMs, and streaming music. You can also throw in a few photographs into the mix, and the Xperia Z5 is a steady, fluid performer, without any sharp spike in processor temperature. However, play games, and the maximum that the Xperia Z5 will endure is about 20 minutes without stuttering. The Snapdragon 810 heats up massively when you play hard, and we saw a temperature spike from 31 degree Celsius to 49 degree Celsius, within 10 minutes of playing Modern Combat 5. Seeing that no other 'premium' flagship smartphone faces a similar issue, it is a major factor to consider.

That said, the Xperia Z5 is a fine, fluid performer otherwise, and Sony seems to have addressed some of its issues that rendered the previous Xperia Z3+ unusable. Talking of audio, the DSEE HX audio engine and Sony's LDAC technology come together to produce stellar audio quality. The dual-speaker



stereo setup churns out audio that is way better than any other smartphone out there, and if you happen to be enjoying a evening with a friend at your place, the Xperia Z5 can act as a worthy portable speaker.

Moving ahead to its battery life, this is not the strongest battery stamina around. The 2900mAh battery pack will last you for about 7 hours of intensive usage, and barely the entire duration of a working day, on lenient terms. Hence, you'll always need a portable charger.

This leaves the camera - the stellar Exmor RS multi-aspect sensor, that actually goes higher than the 23 megapixels that the camera renders after pillarboxing. On paper, the camera is a worldbeater. In real life, it isn't as fast as advertised (0.03 seconds?), images appear oversaturated in most lighting conditions, and renders unnatural colours and skin tones. Noise reduction is not its forte, and images appear soft as a result. Switch to Manual and tweak the settings, and then, some of the images that you get really define its class.

While the Sony Xperia Z5 is a class-leader in a few aspects, its overall performance does not put Sony at the helm.

Souvik Das



Features	75
Design	94
Performance	79
Value	64

Specifications

Display: 5.2-inch 1080p, Chipset: Qualcomm Snapdragon 810, Memory: 3GB, Storage: 32GB, Camera: 23MP rear, 5MP front, Battery: 2900mAh

Contact

Sonv Mobile India Phone: 1800-103-7799 Email: http:// support.sonymobile. com/in/contactUs/ phone/?region=en_IN, Website: http://www. sonymobile.com/in/

Bazaar





LG Pav official!

After Android Pay, Apple Pay and Samsung Pay, time for LG pay? Read more: http://dgit.in/LGPayoffcl

Nexus 6P

The flagship Nexus smartphone!



The rear of the smartphone has the traditional Nexus branding above which lies the fingerprint sensor called Nexus Imprint. Above the fingerprint sensor we have the bulge for the camera. The camera housing that bulges is almost negligible. In fact the bulge is just the right amount to identify, which side is the top of the smartphone without looking at it and that's a good thing.



The display of the smartphone is crisp and very clear. Whatever you do on the device be it play games, watch YouTube videos, movies, read a book, the display is as good if not better than the one we have seen on the Samsung Galaxy S6.

One of the things we love about a Nexus smartphone is the stock Android UI and that's what we have here - Android 6.0 Marshmallow. You now have vertical scrolling for the apps listing. At the top of the app listing you have four apps that change based on your usage. So for example if you open YouTube, Facebook and WhatsApp first thing in the morning, then these apps will be at the top of the app listing.

Coming to the battery life of the smartphone, here is where we faced a bit of a hiccup. Android M boasts of the ability to consume minimum battery when the smartphone is kept idle. Sometimes this worked and sometimes there was a drastic dip in battery life (more than 25%) when it was idle all



night. It is possible that this happened due to background app downloads but the problem was present. Another inconsistency with the battery life was its overall performance. During some heavy days of use the smartphone really performed and was alive till the end of the day. At other times, the device was idle for most of the day and reached 20% battery level by night. It is possible that the battery in the unit we received was faulty but overall the battery performance of the smartphone is average at best.

Moving to the performance of the smartphone, be it gaming, browsing the Internet, YouTube, etc. the phone worked very well. Coming to Nexus Imprint on the Nexus 6P, the fingerprint sensor just works. We recommend that during calibration

you put your finger in the most awkward positions. This will ensure that even when

you touch the fingerprint sensor slightly off, it will recognise your fingerprint and work. The fingerprint recognition is really fast too - just touch it and you are directed to the home screen in a heartbeat. The location of the fingerprint sensor too is convenient - at the back of the Nexus 6P below the camera. Its right where your forefinger would naturally go making the task of unlocking the device feel very natural.

The camera of the Nexus 6P isn't the best in the market. We have devices such as the iPhone 6s Plus and the Samsung Galaxy Note 5 that hold this position. But that doesn't mean that the camera on the 6P is bad by any measure. It produces

If you are one looking to pick up a flagship smartphone with stock Android then by all means, go ahead and pick up the Nexus 6P. The device has impeccable performance, a great camera, vibrant display and a good build. Where it lacks is with its size. It's too big for one-handed operations. Other than that this is one smartphone that deserve the title - Flagship stock Android smartphone.

Sameer Mitha







Features	78
Performance	71
Value	73
Design	87

Specifications

Display: 5.7-inch QHD display; Processor: Snapdragon 810 Octa-Core CPU; RAM: 3GB RAM; Storage: 32GB; Camera: 12MP rear and 8MP front: Battery: 3450mAh

Contact

Huawei India Phone: 18002096555 Email: service.hw.in@ huawei.com



The Apple Watch Dock

Apple launches a charging dock for its Apple Watch which sells for \$79 http://dgit.in/iWatchDock



Advanced Wearble Bracelet!

Sona is another wearable bracelet that tracks your mind and body providing all you need to know! http://dgit.in/SonaBracelt

Bazaar

80

Performance	78
Features	80
Value	80
Build	75

Specifications

Drivers: Dynamic, 8mm; Impedance: 30ohms, Closed Dynamic; Sensitivity: 110dB at 1mW; Frequency range: 20 ~ 20000Hz; Operating range: 30ft (10m); Battery: 60mAh - 4hrs playtime, 100hrs standby; Warranty: 2 Years

Contact

Distributor: Swordstreet Technology Systems **Availability:** Amazon and FlipKart **Website:** www.

brainwavzaudio.com

Brainwavz BLU-100

Great value, solid performance



Coming to the Brainwavz BLU-100, we were pleasantly surprised by the device's audio performance. Aside of a slight bump on the lower mids, the entire frequency range is represented quite nicely. I figure the aptX codec is doing a good job of optimising playback on the Bluetooth protocol, which is quite commendable.

The build quality of the BLU-100 isn't bad either. You have a flat cable connecting the two



drivers and in-line control pod for volume up/down and call answer. The buttons are good quality with great tactile feedback in order to operate without looking. The fit is snug and comfy while isolation cuts off major ambient disturbances. I'd peg pure audio performance to be in the region of the SoundMAGIC

headphones costing about seventy percent of the asking price of the BLU-100, which

E10M or E10S. These are wired

means the Branwavz BLU-100 offers excellent performance for the price; with the added bonus of being wireless.

The only two downers are: four hour battery life and in-frequent skipping. If later versions improve on these two aspects while maintaining the price point we'd have a near flawless product that will be quite a hit amongst consumers.

Siddharth Parwatay

Nexus 5X

Uncluttered, unobstructed, true Android goodness

his year saw two Nexus smartphones, the smaller one being a reiteration of the much-loved LG Nexus 5 (2013). Packing in ample power in a light body, the Nexus 5X is all about sense and sensibility, although the build could have been kept smaller.

The build – all-plastic – may concern a few, but it does not feel cheap in any way. Rather, it is quite sturdy, and weighing just 136 grams, it is one of the most easy-to-use smartphones launched in recent times. The 5.2-inch, 1080p display is sharp, and while it is not as brilliant as the Sony Xperia Z5, the colours are true-to-source, and has a balance that is pleasing to the eye. The Snapdragon 808,



along with 2GB of RAM, proves that if done right, can perform very well without much struggle. Daily tasks are fluid, and even gaming is a good experience, if you can excuse the bad audio quality. Add to that the Android Marshmallow

experience, and this phone is a sheer delight.

The 11.9MP Sony IMX377 sensor takes good photos, and although HDR+ mode

is a tad slow, the photos are absolutely delightful. The 2700mAh battery will get you home each day after average usage, with about 20% charge left.

P.S. Nexus Imprint. The best fingerprint sensor till date.

Souvik Das

90
g_{O}

Features	65
Design	84
Performance	87
Value	76

Specifications

Display: 5.2-inch 1080p, Chipset: Qualcomm Snapdragon 808, Memory: 2GB, Storage: 16/32GB, Camera: 12MP rear, 5MP front, Battery: 2700mAh

Contact

LG Mobile India Phone: 1800-315-9999 Email: https://www.lg.com/ in/support/messagecustomer-support Website: http://www. lg.com/in/lg-nexus-5x **Bazaar**



Apps now Cheaper!

Found 99 cents for an app expensive? Google lowered its minimum app prices in 17 countries. http://dgit.in/GPMinPrice



Figment- iPhone VR case

Turn your iPhone into a VR device using this case - Figment VR. Check it out: http://dgit.in/iFigmentVr

Plantronics BackBeat Sense

Neat little punches

he Plantronics BackBeat Sense has an adjustable headband crafted of thin metal, faux leather earpads and excellent wireless connectivity - all the elements required for the epic wireless headphone experience aimed at audiophiles and casual listeners alike, at an affordable price point.

The BackBeat Sense has excellent connectivity range and battery life. It remains connected even when you are almost 60 feet away from your



Features	88
Design	77
Performance	84
Value	88

Specifications

Bluetooth Profiles: Bluetooth v4.0 + EDR, A2DP, AVRCP, HFP 1.6 wideband, HSP 1.2; Battery Power: Up to 18 hours wireless streaming, 21 days standby time: Charge Time: Up to 2.5 hours; Noise Cancellation: Passive noise blocking, digital signal processing (DSP) and dual microphones; Wireless Range: Up to 100 meters/330 feet from phone or tablet with Class 1 Bluetooth

Contact

Ricoh Imaging India Phone: 1800-180-1064 Email: serviceindia@plantronics.

Website: http://www.plantronics. com/in/product/backbeatsense#fndtn-specs



source, in a space adorned by furniture. Add to that, you get nearly 16 hours of continuous listening, and about 18 days of standby time. The left earpad houses the play/pause, rewind and next buttons, while the right has connect, call receive/end, volume toggle and Bluetooth on/off switch. All of this is neatly arranged within compact ear-mounted outer shells, making it very ergonomic. At 140 grams, the BackBeat Sense is light, which aids long hours of listening, despite it being supra-aural in design.

Audio performance is superlative - the bass is pronounced, mids are distinct, and highs are optimum, slightly overpowered by the bass. Soundstage is good, but marginally lacks the wholesomeness due to the close proximity of the dynamic transducers to the ears. Wired audio suffers due to high impedance, and would need an amplifier to work well.

Overall, the Plantronics BackBeat Sense is one of the best, affordable wireless headphones in the market.

Souvik Das

Moto X Style A camouflaged Nexus? Hmm...



ith a 5.7 inch QHD display and Snapdragon 808 SoC, the Moto X Style is what last year's Nexus 6 should have been. It's a solidly built smartphone that many may find heavy, and despite being only 0.3 inches smaller than the Nexus 6 in screen size, it is much smaller and easier to use overall - a testimony to Motorola's design team.

Making a departure from Motorola's usual methodology, the Moto X Style has an IPS display instead of AMOLED. As a result, the Moto Display feature turns the screen into a shade of grey, since individual pixel can't be lit up on IPS displays. It of course makes the feature less effective in terms of battery



Features	.78
Performance	.86
Value	.76
Design	.86
-	

Specifications

Display: 5.7 inch QHD; Processor: Qualcomm Snapdragon 808; RAM: 3GB; Camera: 20.7MP rear, 5MP front; Battery: 3,000 mAh; Operating System: Android 5.1. Marshmallow started rolling out

Contact

Phone: 1-800-102-2344 Email: Live Chat and Email through Motorola India website Website: http://www.motorola.in/

life, but not visibly so. That said, the Moto X Style is still not a very battery efficient phone. The QHD display along with Snapdragon 808 are quite intensive on the 3000 mAh battery and the phone lasts for about 8 hours on regular usage.

Further, the Moto X Style delivers performance similar to the Nexus 6P, which is more than good enough in most usage scenarios. What it lacks is the fluidity that we saw in the first and second generation of Moto X smartphones, which is kind of unexpected.

The 21MP camera is another departure from regular Motorola practices. This phone has a really nice camera. While it's definitely not as good as an Apple iPhone 6S Plus or Samsung Galaxy Note 5, it can easily go toe to toe with the Nexus 5X and 6P.

Prasid Banerjee



Pepsi Phone?

Out of nowhere another company called Koobee wants to launch a 'Pepsi edition' phone after Oppo. http://dgit.in/KPepsiPhne



The \$10 smartphone!

Leaving behind the Firefox OS phone, Walmart has a new cheapest smartphone that costs \$10. Read all here: http://dgit.in/wlmrtphone

Bazaar



Jaybird X2 Premium quality, premium price



Performance	85
Features	88
Value	70
Build	85

Specifications

Bluetooth: V2.1 + EDR; Profile: Handsfree v1.6, Headset v1.1, A2DP v1.2 and AVRCP v1.4; Range: 10 meters (30 feet); Rated battery life: Up to 8 hours; Standby Time: Up to 250 hours; Input Voltage: DC 5V 100mA; Charging Time: -2 hours; Weight: -13 g;

Contact

Headphone Zone Phone: +91 7506646988 Email: direct@ headphonezone.in Website: http://www/ headphonezone.in he Jaybird X2 bluetooth in-ear headphone is a great product in a couple of ways. Firstly, it's wireless – an uncommon attribute in itself, it's not the X2's only redeeming feature. Other than being wireless what sets it apart is the lavish attention to detail its creators seem to have bestowed on it. Right from the crafting of the ear fins, to the high quality hardcase, to even the minutest features it packs such as the voice prompts for func-

tions such as power on or pairing

- every feature or design decision seems to be towards a goal, and that is, to be a sturdy sport-oriented IEM. It's sweatproof too and the fit is secure enough to endure your most rigorous workouts. The little cable management accessory too is brilliant in completely eliminating cable harmonics and ensuring snug fit. So far so good, though what about performance?

PENTAX

The Jaybird X2 has a rich and vibrant tonality. It goes very well in line with the active lifestyle ethos that the X2 comes from. There's just enough bass without being overbearing, while at the same time the X2 displays a surprising amount of detail for wireless headphones. At ₹15,999 it's certainly not cheap. And one of the most pertinent questions to ask is, does the Jaybird X2 sound as good as a pair of wired IEMs at that price point? Guess what, they do! I had the Cowon EH2 handy

for reference and the X2 is evenly matched, in fact, bettering the EH2 on certain genres. If I had to nitpick I'd say that the housing is a little large and getting a good fit takes a bit of practice and experimentation. But they're minor complaints. Overall, if you want the ultimate in audio designed for fitness activities the Jaybird X2 is for you.

Siddharth Parwatay

Pentax K-S2

Makes sense for beginner-level shutterbugs

entax reintroduced itself under Ricoh Imaging, introducing in India a line of new cameras. The Pentax K-S2 is the basic offering in Pentax's DSLR offering, falling within the 50k price bracket. It employs a 20.1MP APS-C sensor, along with a fast image processor. To begin analysing, image qualities, straight off Auto mode, is rather good. Try it in well-lit situations without pushing the ISO higher, and the Pentax K-S2 is as good as any Nikon or Canon entry-range DSLR.

ISO levels is one limiting factor of the Pentax K-S2. Under low and uncertain lighting situations, bumping up the ISO keeps making images softer (more than what is seen in other cameras). ISO 1600 is the last level of ISO that still passes off as tolerable, beyond which images ren-

dered appear too soft, and ISO 12800 is practically unusable. The shutter mechanism on the camera, however, is fast. And, while the autofocus motor is quite fast, the tacky build quality and the noisy motor are major letdowns in the device's overall user experience. Movie quality is decent, but nowhere near the best.

The K-S2 is big and bulky, owing to the weatherproofing on it. This is the only

budget DSLR to come with this feature, which makes it stand out and quite unique. Other fea-

tures include the swivelling LCD and LED-lit buttons. If you're an advanced photographer, look away, as the Pentax K-S2 is thoroughly for beginners, offering decent image quality and weatherproofing.

Souvik Das



Features	84
Design	65
Performance	70
Value	55

Specifications

Resolution: 20.12 million effective pixels; Sensor size and type: APS-C CMOS; Kit lens: SMC Pentax DA L 18-55mm f/3.5-5.6G AL; Viewfinder: 3-inch TFT LCD, pentaprism eyepiece viewfinder; Shutter speed: 1/6000" to 30"; ISO: 100-51200; Weight: 618 grams (body only); Connectivity: USB 2.0

Contact

Ricoh Imaging India Phone: 1800-103-0066 Email: ril.info@ricoh.co.in Website: https://ricoh.co.in/ products/dslr/k-s2/26/422/ **Bazaar**

Debit card for bitcoin

Shift is the first ever debit card for bitcoin launched by Coinbase and backed by VISA. http://dgit.in/ShiftDbtCrd



Buzz of Vibe S1

Want to learn how Lenovo created the buzz. before the launch of its Vibe S1. Check out. http://dgit.in/VibeAds

Coolpad Note 3

Budget phone with a fingerprint sensor

he Coolpad Note 3 is not a particularly good looking phone. It's looks are rather indistinguishable from a majority of other phones. Build quality, however, is somewhat better. Along the edge runs a metal band and there is an aluminium frame inside. which makes the phone feel rigid in hand and while in use. The 5.5-inch display on the Coolpad Note 3 is good and offers vibrant, true-tosource colours.

The Coolpad Cool UI is simple to navigate, and the phone doesn't house a traditional app drawer. However, main attraction of the UI experience is the new fingerprint sensor which works like a charm. It is one of the fastest fingerprint scanners we have come across, and in our tests, it turned out to be quite accurate too.



Features	86
Performance	80
Value	62
Design	69

Specifications

SoC: Mediatek MT6753; RAM: 3GB; Internal Storage: 16GB; Display: 5.5-inch 720p: **OS:** Android 5.1 Lollipop; Battery: 3000mAh

Contact

Coolpad India Phone: 1800-1027-159

Website: http://www.coolpadindia.

com/



Powered by an octa-core MediaTek chip and 3GB of RAM, the phone is quite capable in handling everyday tasks. However, it does stutter if you open a few heavy apps back-to-back, and is rather inconsistent at times. The Coolpad Note 3 offers about a day's worth of battery life. The 13MP rear camera on the Coolpad Note 3 is not one of the best shooters in this category, but it gets really close.

The Coolpad Note 3 has everything that you might need from an entry level smartphone. A decent display, reliable performance and a workable camera. On top of that, this is the first and only phone which offers fingerprint security at this price point quite unique feature, adding to the device's desirability. However, Coolpad has left too many rough edges which need to be polished out, making us recommend the Meizu M2 Note over this device.

Hardik Singh

Oppo R7 Plus

Big, beautiful and overpriced



here is no denving that big phones, which fall into the phablet category, are better for viewing high resolution content rather than ergonomics, and the odds of them fitting in your pocket are not too high. Oppo R7 Plus fall in the similar category. The phone has a very premium build made out of aircraft grade magnesium aluminium alloy.

A large, 6-inch 1080p AMOLED panel adorns the phone. While the colour saturation is well adjusted, the display does have a bluish hue to it. On the performance front, it has a Qualcomm Snapdragon 615, but combined with 3GB of RAM and good optimisation work done by Oppo, the R7 Plus performed fluidly, throughout our usage. At the back, there is a fingerprint sensor, which is easy to use, and is quite accurate.



Features84	
Performance67	
Value52	
Design84	

Specifications

SoC: Qualcomm Snapdragon 615; RAM: 3GB; Internal Storage: 32GB; Display: 6-inch 1080p: OS: Android 5.1 Lollipop; Battery: 4100mAh

Contact

Oppo India

Phone: 1800-103-2777 Email: service@oppomobile.in Website: http://www.oppo.com/in/



It features a large 4100mAh battery is more than enough for the job. Using the phone as a daily driver, the phone lasted us almost a day and a half between charges, every time. While the phone does a commendable job in sustaining its battery percentage, the camera is even better. The 13MP shooter at the back is fast and accurate in almost all lighting conditions, thanks to the laser-assisted autofocus mechanism.

Conclusively, Oppo R7 Plus offers one of the best 13MP cameras, dependable battery life, and an outstanding build quality. However, all this is negated by the price, and the performance it provides at this price. If this would have been at least 8k cheaper, it would have possibly been one of the best options.

Hardik Singh



Reduce the blue

Reduce the blue of your TV screen with the help of Drift box to get a good night's sleep. http://dgit.in/ControlBlue



No Shit, Samsung!

Samsung is now shipping Note 5 with an idiot proof warning on the screen protector of the phone! http://dgit.in/SPenWarning

Bazaar

71

Features	81
Design	60
Performance	80
Value	52

Specifications

Impedance: 30Ω; Frequency Response: 18-20000Hz; Total Harmonic Distortion: <0.5%; Sound Pressure Level: 120dB (1KHz/1Vrms); Mic Sensitivity: -44dBV/Pa

Contact

Sennheiser India Phone: +911244187800 Email: http://en-in. sennheiser.com/servicesupport-contact Website: http://dqit.in/SennPMX686

Sennheiser PMX-686G Sport

Run to the beat

he Sennheiser
PMX-686G Sport
is yet another addition into the long
line of fitness-oriented pair
of earphones taking the Indian
market by storm in recent months. The
PMX-686G Sport are more focused on keeping
up your tempo, rather than focusing on hardcore audio performance. The neon green and
the two shades of grey (no pun intended) fuse
in well to give a lively combination, breaking
away from the monotony that in-ear
headphone colour combinations and builds
often tend to reach.

At just 37 grams, the PMX-686G Sport is a perfect build for activities in sync with your favourite playlists. The neckband is light, and curves perfectly for the SteriTouch antimicrobial earbuds to fit. The inbuilt microphone and volume controls are placed too high up the wire, but the

intention is to ensure that
the mic remains near your
mouth, and that is achieved.
Audio can be very loud, although
there is distortion at higher volume
levels. Bass frequencies are loud and
pronounced, and so are the highs, as
a result of which the mid frequencies are
flattened. The idea behind this is to keep
up with tempo during exercises, and a
thumping bass can work wonders to keep
you motivated.

There is a considerable amount of audio leakage, owing to its open design.
Audio timbre is very mediocre, which is a major letdown, considering its price. Overall, the Sennheiser PMX-686G Sport is an ideal pair of earphones for activity times, but that's about.
Anything more and its shine starts to rub off as it won't really stand the test of purists.

Souvik Das

Lenovo Vibe S1

Designed like Moto, with Lenovo inside

he Lenovo Vibe S1 is all about the design.

It has glass on both the front and back, with a curved back and a metal rim on the side. Despite the glass body, the phone isn't a fingerprint magent and is very light.

The overall design is not only good looking, but also really ergonomic. It's right up there with the OnePlus

2 and the Vibe S1 looks a tad

The 1.7GHz octa-core MediaTek MT6752 processor also performs quite well, with no stutters or lags. Gaming on this phone is

better than the OnePlus X.

better than a Snapdragon 615, but inferior to the Snapdragon 801. The tradeoff though is in battery life. The Vibe S1's battery can last 7-10 hours on regular usage.



Further, the 13MP camera on the back is also quite good in terms of image quality. It does well in depicting true to source colours, while being somewhat lacking in details. Also, the camera is a tad slow in focusing and image processing, when compared to the OnePlus X or the Moto X Play. On the front is a dual 8MP+2MP camera, which doesn't really accomplish much. While the image quality is satisfactory, the dual-camera setting merely allows you some post processing options, nothing more. Bit of a downer, this, to be honest.

Lastly, the 5 inch 1080p display is slightly dim and not quite as good as the two competitors mentioned above. Lenovo's Vibe UI also falters with too many pre-installed apps.

Prasid Banerjee



77
65
86
70

Specifications

Display: 5 inch 1080p; Processor: 1.7 GHz octacore MediaTek MT6752; RAM: 3GB; Battery: 2500 mAh; Operating System: Android Lollipop; Camera: 13MP rear, 8MP+2MP front

Contact

Lenovo India Pvt Ltd Phone: 1 800 3000 9991 Email: dgit.in/Lensupp Website: lenovo.com/in **Toolbox**

Tips & Tricks

With Android 6.0 Marshmallow rollouts in full swing it's the perfect time to unravel its secrets

No one trouble shoots your gadget woes like we do. We exaggerate of course but you get the idea.

What's the best Android launcher for you?

Against the backdrop of Microsoft launching its own launcher for Android, we take a look at some of the most popular and obscure launchers out there and tell you which one is the best for you.

Dhruv Kumar readersletters@digit.in

> ndroid, from its very inception, has been well known for its open source and highly

customizable nature. With an Android device in your hand, you can make it look and behave exactly the way you desire. Home Screen Customization to the level that Android offers, is by far, way ahead of what other mobile operating systems offer. Launchers on Android let you customise a variety of things ranging from home screen layouts, style of icons and animations to even custom gestures and launch actions. With companies like Windows, Nokia and Yahoo foraying into the launcher space, it's time we brought you a comparative look at some of the most popular launchers (and even obscure ones) out there.

Google Now Launcher

Google's own offering is the simplest that a launcher can offer. It's fast, simple and easy. Sporting a more classic look of an Android launcher with the simple dock and icons home screen and a search bar at the top. Though this launcher has not

much to offer when it comes to customizations, it is definitely a treat for the ones who like things plain and simple. What you however can control is few settings such as app drawer suggestions based on the frequently used apps.



Simple and easy Google Now Launcher layout



Arrow Launcher's 'Recent' page

What makes this launcher so widely loved is access to Google Now on the left most home screen.

Arrow Launcher by **Microsoft** Recently, Microsoft Corporation decided to present their Android fans with a simple and easy to customise launcher. On first glance Arrow's interface will remind you of the iOS home screen UI with the page full of apps and a frosted background swipe-up settings menu. Arrow launcher customises itself and gives the

> user one tap access to their recently used apps and settings. The main screen being the apps screen, the other three are people, recent and widgets screens. All of them periodically update depending on your interaction with the phone. So, say if you took a photo 15 minutes ago, the picture will be visible on the 'recent' page, along with your recently contacted contacts and recently used apps

The iOS style swipe-up menu, on the other hand, gives vou access to the frequently used settings along with an expanded view of your docks page where you can place the more necessary apps as per your choice. Microsoft also gives users some eye candy

with Bing Wallpapers.

This launcher definitely looks promising and very well executed.

Z Launcher Beta by Nokia This launcher by Nokia, still in its beta testing phase. An interesting feature it brings is the ability to scribble. The home

Kotaku Blacklisted

Ubisoft and Bethesda Softworks have both blacklisted Kotaku for gaming coverage. Find out why. http://dgit.in/GamingPress

Tumblr launches IM

Tumblr joins in the IM bandwagon by launching its new instant messaging app for web, Android and iOS. http://dgit.in/TumblrIM

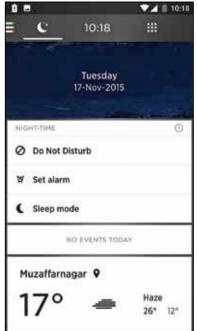
Feature



Z Launcher Home Screen

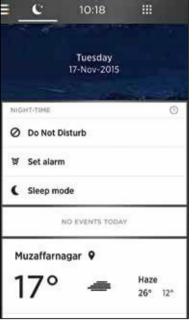
screen is a writing pad, so when you draw a letter on the screen, all apps and contacts containing that letter will be displayed on your home screen. What's more even keywords from your bookmarks and web history can be displayed. Apart from this, the main home page of the launcher displays six of your most frequently used apps that change according to your usage.

Yahoo Aviate Launcher Aviate has been around for a while now. It adapts itself based on the time of the day, your location and your priorities, presenting to you the right apps and information right when you would need it. In terms of visual customisations, Aviate lets vou choose between white, black and transparent themes along with the usual ability to change the icon pack. With



'Today' page Aviate Launcher

Aviate, during your daily commute, the launcher will go into the 'Moving' profile or space as they call it, and present to you all the apps that you would generally use while commuting along with providing the traffic updates. Similarly adjustments happen for 'Home', 'Work' and 'Listening' profiles. Strangely, Aviate doesn't have an 'app drawer' icon. What's special is that when you swipe up from the dock, a small menu displays your favourite and recent contacts giving you the option to contact them just with a few taps.



Nova Launcher

Nova is one of the oldest, most downloaded, highly customizable, performance driven home screen replacements. This launcher by TeslaCoil Software is Android customization at its best.

Personalisation abilities that Nova offers are in abundance: don't like the app dock? You can remove it completely. Don't like the status bar? You can hide that too! Many of these features are not found on most other launchers.

Special mentions also to the ability to enable unread count badges which display a small notification icon over the app which has pending notifications (and it works for most of them which is rare). With the Nova Launcher, the Android home screen can metaphorically be the canvas of your Android UI dreams.

It's free to download on the Play Store, but some features such as Gestures, Unread counts, icon swipes, etc. require the Prime version (₹150).

> EverythingMe Launcher

Like Yahoo's Aviate, this launcher too offers contextual information and app shortcuts depending on time, location and other preferences.

The layout of the home screen isn't a complicated at all. The main screen display auto-classified applications into folders which also open up as feeds. Which means that when you tap on a folder, say 'around me', the launcher will display useful location based applica-



Customized Nova home screen with a custom icon pack



Feature



Stay connected always

Pillow talk, a wearable that lets you stream your heartbeat to a loved one's pillow. Ideal for long distance romances? http://dgit.in/PillowTlk



Buck up banks!

How can IoT bring about a huge change in the banking sector? Read all here: http://dgit.in/IoTBank

tions on your device and give you a view of your exact location with suggestions for nearby Points of Interest. This feature only works in few categories such as News (where local news is displayed in the feed) and Places. The other folders however are the usual folder style that also display app recommendations. Apart from these you can add your own apps and folders to the screen or can even add more screens. The other screen on a right-swipe is the 'quick contacts' screen.

A highlight feature is the Prediction Bar - the single row bar present right above the App Dock on the main home screen. This bar contains five icons which periodically change according to the user's activities. It may display your recent apps, your recent contacts or even the last image you clicked.

The various customizable options the launcher offers are folder styles, icon packs, gestures, daily wallpaper and the ability to toggle various sections of the default home screen layout. The app drawer here again is the traditional Jellybean type drawer with a horizontal layout.

The launcher learns and ups its usefulness but the UI isn't that visually appealing. It's free and hence worth a try.

Buzz Launcher Buzz Launcher was awarded the best Brand Identity award by Red Dot. It's is a highly customisable launcher that works on the concept of sharing of themes designed by users.



EverythingMe Launcher with the Prediction bar in action



A homepack of Buzz Launcher



Home Screen of SF Launcher 2

'Homepacks', as these themes are called, are a new world in themselves. Each home screen layout theme (homepack) is unique. What's special here is that you don't have to worry about downloading tons of other icon packs, widgets or wallpapers (like in other cases) to make your Android home screen look beautiful. All you need to do is go to the 'homepack buzz' screen which is an online display of the currently downloadable themes and take your pick. These themes are updated regularly adding to the collection of already present 800,000+ themes all of which are free and are very intelligently classified by genres and colours. The application icons, layout, colours, wall-

papers and even the fonts come bundled with the 'homepack'. Not to forget once downloaded you can even play with the contents of the theme according to vour taste.

The easier customization options, apart from the themes, that Buzz Launcher offers are: custom icon frames (for all your icons to look similar) and layout settings granular up to even the margins around an app icon and grid sizes. It's free, and a definite must-have (not just a mere must-try).

SF Launcher 2 Fond of material design? Well with this launcher you can transform your entire UI into cards. The top of your home screen displays the Google Search bar with a beautiful header image as the background in Google Now Style (just like your Google search app). The icons and the widgets are displayed below in a scrollable screen of cards depending on how the user wishes to display them. The App drawer in this launcher opens like your Google Apps options i.e. the regular swipe from the left of your screen covering half of your screen.

The customizable home settings the launcher offers are: ability to choose between various theme colours, lots of Header Images to choose from, header styles and the ability to hide the status bar too. You could even change the icon pack and other settings which get unlocked

TLDR READY RECKONER

You want the power to customize: Nova Launcher

Right from the basic icon packs, to the more complex home screen animations, and even custom swipe gestures - there is no absolute limit to what this launcher can let you do provided you're ready to give it time

If if want to make your phone look completely different: Buzz Launcher

The look and feel changes that each 'homepack' has to offer is phenomenal. It wouldn't be wrong to say that each theme in itself gives you the feel of a completely new launcher and to an extent a completely different phone.

If you prefer first things first: Yahoo Aviate Launcher

The ultra-useful "Today" page of the main home screen beautifully arranges important information such as weather, news and calendar entries right on the home screen along with apps and settings based on time and location.

If you're not fond of change: Google Now Launcher

Natively the default launcher for Nexus devices, it gives you the perfect blend of minimalistic beauty with the best of stock Android features.



Live feed on Instagram

Instagram soon will be shutting down its support to third party apps and not provide live feeds to them http://dgit.in/FeedOnInsta



Feature

when your upgrade to the Plus version of the launcher. The app drawer customizations on the other hand include the drawer colour, icon sizes and viewable grids.

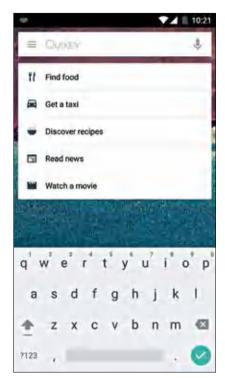
A recommendation for all the material design lovers. The launcher gives your home screen a completely new yet familiar look. It also simplifies things to a great extent. The Plus version with more unlocked features comes at a price of ₹247. That's asking a lot for the upgrade.

Launch by Quixey

One of the most recent players in this competitive arena of Android customization, Launch by Quixey, has a lot to offer up-front and yet manages follow the design guidelines of Google Now Launcher.

The magic of this launcher lies in basic gestures. A simple swipe up from the home screen opens the app drawer and the drawer itself feels like an intelligent mix of material design, the marshmallow app drawer and the old jelly bean launcher with customisable tabs.

The unique features offered begin with the left edge swipe menu similar to the Google Application settings menu. Swiping down on the home screen displays a search bar similar to the Google Search bar but, far more useful. It gives you basic options to 'find food', 'read news', or watch a movie to name a few. Another highlight is Deep View Cards, which open with a swipe towards the right from the main home screen. The Deep View Cards provide you information from inside installed applications for example you could setup a Google Maps card with food as the keyword and Quixey will keep showing you the



The Quixey Search bar

nearby food joints wherever you go. Now that's useful. The basic launcher settings include custom icon packs, gesture customisations, device search options and unread counts. The 'People' App that comes with the launcher also adds beauty to your recent contacts view and makes dialling and messaging simple without actually replacing your dialler or messaging app. Again a must try.

TSF Launcher 3D Shell 'Say goodbye to the boring traditional launcher right now', states the Google Play store listing of this launcher. If you're wondering what the developer meant when they emphasised the term 3D shell let us explain:



TSF 3D Calendar Widget

simply put it's 3D animations. Switching screens, widgets, they all come with 3D animated effects.

You can have an always moving banner on your screen or a dangling set of photos from the calendar widget. Apart from the 3D widgets, other noteworthy customisation options include: icon designer feature, icon themes, custom gestures, interactive app dock, unbelievably realistic screen transition animations, unread counts and a special side menu that auto-hides behind your home screen and contains important user-picked applications.

Another good option if you want a fresh look. Make sure you download and use all their beautiful 3D widgets which make the launcher worthwhile.





UNRAVELLING THE MARSHMALLOW MYSTERY

Move over Lollipop, Marshmallow is finally here. And it tastes good! For, with this latest OS update for Android, Google seems to have decided to hand over the reins of power to the user instead of sticking to its usual spoon feeding formula. So you can now tinker around with your device and make it look and work the way you'd like it to. Instead of focusing on the UI changes this time around, the update offers more options in the settings, each guaranteed to make your life simpler as well as more secure. Let us take a quick look at the magic Marshmallow lets you create by means of a few tricks within the settings:



Google Now on Tap

Google has introduced a new feature called 'Google Now' which is exclusive to Marshmallow devices. Thanks to it, search is now literally just a tap away. To enable this feature, all you have to do is head over to the settings of your Google App, tap on 'Voice' and enable the 'Now on Tap' option. Then, this feature can be availed of by simply long pressing the 'Home' button. Google Now launches as on overlay for your existing app and provides information based on keywords that it picks up rather intelligently from the active screen. For example, if your friend texts you a drop pin, all you need to do is to stay on the message screen and long press your home button to discover just how 'smart' your phone can be.



Ever felt like letting WhatsApp use your device contacts but



Android 6.0 Marshmallow39

Tips & Tricks has its own page numbers, and does not follow the rest of the magazine's page numbers. This is done to ensure that you can cut out and save T&T in a separate folder for later reference.

having them stay hidden from Facebook? Marshmallow now lets you do all that and much more with the new App permissions setting. Either head over to Settings > Apps > App permissions, or modify the settings for individual apps. This also means that you can now choose what data any installed app can or cannot access on your device.



Tune your System UI

Now this is one feature Google clearly does not want every Tom, Dick and Harry to exploit as

Languages
Default language: English (US)

"Ok Google" detection

Now on Tap
Provides info based on the current app
screen when searching by voice or holding
the Home button

Hands-free

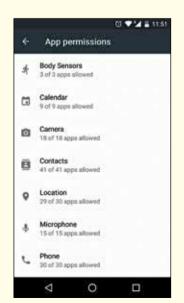
Speech output
On

Offline speech recognition
Manage downloaded languages

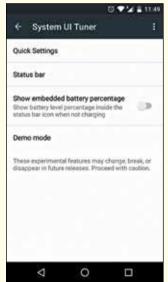
Block offensive words
Hide recognized offensive voice results

Enable Now on Tap

they've termed it highly experimental themselves. Basically, with Marshmallow, you can take customizing your device a couple of notches higher and play around with the system UI. So it's now possible to add or remove tiles from the quick settings panel, or even hide particular icons such as alarm or Bluetooth permanently from the status bar. However, there's a bit of trick involved to set these features in motion, making the whole deal even cooler. To activate the option, long press the settings icon (gear icon on the

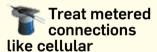


App Permissions



Tune System UI

top right) in the quick settings panel until it begins to rotate. On releasing it, a success dialog box appears at the bottom. The option is then visible within the phone's settings.



Tired of background data eating up your internet plan? Marshmallow brings you some good news in this regard - you can now treat metered connections as cellular. This means network restrictions, when enabled for specific connections, put a limit on background data of apps and also warn you before using these networks for heavy downloads. To get started, go to Settings > Data Usage, select 'Network Restrictions' from the '3dot' menu, and simply choose the connections on which you want the background data to be restricted.

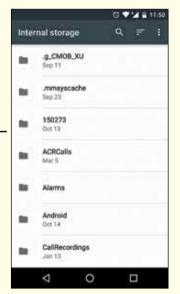


In-built File Manager

Android finally has its own usable inbuilt File Manager – a much-needed, highly awaited feature at long last. This is, again, not so easy to find. Once discovered, however, this should be greatly useful and convenient

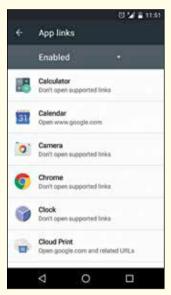


Network Restrictions option



File Manager

to the rookie as well as nerd. Head over to Settings > Storage & USB and look for the 'Explore' option visible at the bottom of the screen. That is all.



App Links

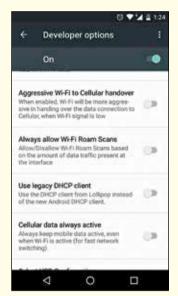


Default Apps



Link web-links to apps

If you've ever wished for a web link you came across while browsing the net on your phone



Develpoer Options - Cellular Data always active

to take you straight to the app, the genie called Marshmallow has granted it to you. You can now link a web addresses to a specific installed application on your Android device. For instance, if you click on an Amazon link, it'll open directly via the Amazon app. To enable and customize the links, head over to Settings > Apps, click on the gear icon on the top right and select 'App links'.

Change default apps for voice, browser, phone and SMS

Are you the kind of geek that fancies more than one dialler app or is fond of dabbling with different browsers? Well, guess what, with Marshmallow, you can now change the default applications for even these regular tasks. Not just that, it also lets you change the default app for Assist as well as Voice input. So if you don't find the Google one to be to your liking, you can choose from the various options available in the Play Store and set your own custom voice assistant.

Keep cellular data always active

In a stroke of brilliance, this feature lets you keep your mobile data and Wi-Fi simultaneously active, leaving you with almost no network switching time! Important to note here is that even though you'll always stay connected, your mobile data won't actually be used, which means no more disconnected periods when your phone is in the midst of switching from WiFi to cellular data.

To use this feature, you have to first enable the developer options. Go to Settings > About phone. Tapping the build number about 10-12 times will show you a popup dialog box congratulating you on becoming a developer. 'Developer options' then become visible under the 'System' section of the Settings. Turn them on, look for the networking section and enable the 'Cellular data always active' feature. Needless to say, if you're the experimental kind, you could also try other interestingsounding networking options. Happy tinkering with Marshmallow 6.0, all of you!



Q&A

No UI is future UI?

Wondering what is the next big thing in user interfaces? Read this before coming to a conclusion! http://dgit.in/NewNoUI

Apple's P2P Payment soon?

Apple to soon launch a service for mobile peer to peer payment service, just like Venmo from PayPal! http://dgit.in/iPayP2P

Internet woes, games that don't save automatically, recurring BSODs and powerbank conundrums

Our readers are at it again but we've handled much worse!

Dysfunctional dongle

Dear Sir, Here's my PC configuration:

- OS Windows 8.1 Pro (64 bit)
- CPU Intel Core i3 4150 @ 3.50 GHz
- RAM 8 GB Kingston HyperX DDR3 @ 1600 MHz
- HDD 1 TB
- Motherboard ASUS H81M-CS
- Dongle Dlink CE0700

Each time I try to connect to the internet the dongle's software shows either of the following error messages:

- 1. connect failed. The PPP link control protocol was terminated.
- 2. connect failed. The specified port is not open

Please help me figure out the issue.

-M. Premananda Singh

- Well, it seems there could be more than one reason for this to happen. Firstly, we want you to check that you have sufficient balance in your internet account if this happens to be a pre-paid connection. If you do have enough balance then you might want to try fiddling around with the configuration settings. Follow these steps:
- 1. Open Control Panel and navigate to Network and Dial-up Connections.
- 2. Right-click on the dial-up networking connection associated with the dongle, and then click on Properties.
- 3. Click on the Networking tab, and then click on Settings.
- 4. This should bring up a window with three check-boxes. Clear the check box right next to Negotiate multi-link for single link connections.

Now, save the changes made to your network configuration and try reconnecting again. Hopefully, this should have resolved the problem. If not, go back to the connection and follow these steps.

- 1. Right-click on the connection, and then click on Properties.
- 2. Click on the Security tab.
- 3. Under Security options, click Allow unsecured password in the Validate my identity as follows box, and then click OK.

If nothing works, consult your ISP.

🖲 Blue Screen Of Death

Dear Digit, I am an avid reader and fan of digit and am writing this letter to asking for your help with my computer. These are my computer's specifications:

- Motherboard Gigabyte GA-78LMT-
- RAM Corsair Vengeance 1x 4 GB 1600
- HDD WD Green WD10EZRX
- PSU Corsair VS650
- Graphic card ASUS AMD HD5450 Suddenly, one day while I was gaming my computer screen turned blue and a screen saying 'Dumping physical memory' started showing and the computer shut down. Afterwards, when I tried booting it up, it did not start at all. Please tell me what to do without formatting the system as the data stored on it is very precious.

-Anurag Chittawar

Analyse the minidump to know what exactly caused the crash. Be in the dark no more! More power to you.

Thanks for writing in Anurag. The sequence of errors mentioned can be the result of any number of factors which is why it is important to analyse the memory dump to get to the root of the problem. Get your hands on a Linux LIVE USB stick and boot your system up. Navigate to C:/Windows/Minidump to find all the memory dumps and copy them onto the USB flash drive. Once that's done, go to any website that offers free memory dump analysis and upload your dump according to their instructions. You should get the appropriate reason as to why your system crashed.

Start off by replacing the BIOS battery. If that doesn't do the trick then your memory dump analysis should point the finger at some software or service. Using an Windows Installation Media, try repairing the OS. If that doesn't help then you might as well start backing up all your files using the Linux LIVE USB stick and then go in for a fresh installation. Also, check the HDD for any bad sectors while you're at it and get it replaced if there are any.

Permadeath problem

Hi Team Digit, I need your help. I recently got Assassin's Creed Black Flag and it

> works smoothly. But it doesn't load the saved game. I have only completed one per cent of the entire game play so I didn't lose much progress. But with this issue, how do I play?

> > -David Abel Xavier

This is a very common problem with Assassin's Creed Black Flag and the solution is pretty straight forward. Navigate to the installation directory and find the execut-

Q&A



Disable Cloud save to solve the issue

able for the game which should be AC4BFSP.exe. Right-click on the file and click on Properties. Under the Compatibility tab check the box next to Run this program as an Administrator and click on OK. Check if the save game functionality works as designed. If not, simply disable Uplay Save by opening up Uplay and clicking on the little gear icon in the top-right corner. Uncheck the box next to Enable Cloud Save Synchronisation for supported games and then click on SAVE. Hopefully, this should solve the problem. If not, then navigate to C:\Program Files (x86)\Ubisoft\Ubisoft Game Launcher\ savegames\randomnumbers\437 and you should find two files - save.DELETED and save.metadata.DELETED. Remove the. DELETED part from the end of both files and load up the game. You might have to do this each time you play the game.

Variable voltage

Hello, I recently bought a Honor 13,000 mAh powerbank, Model No AP007. I have the following queries regarding this power bank. I want to charge my Asus Zenfone 2 using this power bank. The charger that came with my Zenfone Has the following Output Specifications:- 5.2 V 1.35 A. Whereas the Power Bank Output is 5V 2A. So can I charge my Zenfone 2 with the Honor powerbank safely? I have this concern due to different voltages from my charger and the power bank. I do not want to damage my phone because of such issues. Please guide me whether it is safe to use the Honor AP007 13,000 mAh power bank with my Zenfone 2. Also, please write an article demystifying powerbank voltages, interoperability, etc. Thanks.

A Hey Jatin, you shouldn't worry about this since all phones come with improved

circuitry that can handle a voltage range around the vicinity of 5 volts without any issue. In fact, very few chargers are actually capable of providing 5 volts exactly. There are some variations or the other and the phone's charging circuitry is designed to handle such minor variations. So yes, you can safely charge your Zenfone 2 using this powerbank. Thanks for your suggestion, we're on it!

🖲 Crash, run, repeat!

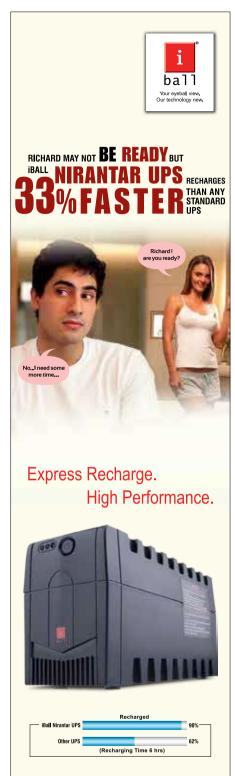
Hey Digit, I'm an average computer user with 2 GB RAM, Intel HD graphics, Intel Pentium processor, Windows 7 32-bit and Asus P5KPL AMP/S motherboard. In my computer, whenever I open more than 4 or 5 applications my PC crashes and when I



Minor variations in voltage levels shouldn't be a concern.

play games it crashes within 9 or 10 minutes. Please suggest a remedy for it. —R. Narayan

If your PC keeps crashing then you should start off by analysing the Minidump. We've already elaborated upon that in an earlier query in this section. That should give you a direction to move in. Other than that, it seems this could be a heating issue. Remove the heatsink from your CPU and reseat it and apply a new layer of thermal paste while you're at it. While you haven't mentioned which applications you are running, we aren't confident at pointing the finger at your low RAM capacity. Newer titles of GTA and NFS require quite a lot of RAM and they'll crash owing to the reduced capacity. So analyse the Minidump, check the CPU temperature to figure out if you need to reseat the processor and consider getting an extra stick of RAM.





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Street smart

Agent001

We tell you about core components buying advice after a long time. Use well this information.

Price watch

This month we have focused on categories like All-in-One PCs and Smartwatches.

Advances in technology herald cheaper, brighter

Dhinoi Dings readersletters@digit.in

and smarter bulbs

ight plays a big part in our daily lives-whether at work or play. And lighting technologies have come a long way from the flickering torches and oil wick lamps of yore to bulbs powered by electricity. Bulb technologies have also undergone many changes, evolving from early incandescent to florescent tubes to LED powered ones. In fact, now we have an enormous variety of bulbs specifically many designed for specific purposes like auto, industrial, photography, etc.—and available in wide variety of sizes, light output capacities, hues and colors.

Surprisingly though, home lighting in Indian homes is characterized largely by bare incandescent bulbs and CFL lamps, the ubiquitous strip tube light, and the occasional halogen down lighter. However, recent developments

in lighting technologies poised to usher in a change - and have a significant impact on the ambience of the home.

What's smart about lighting?

The newest technology on that promises to brighten up your life is the "smart light". So, what is that makes them smart? For a start, some can be controlled remotely, while others can change colors, or work in tandem to produce various kinds of lighting effects. What makes a smart light different is that it has the ability to respond albeit in a limited fashion, to inputs from the environment. For instance, lights that detect the presence of a person in a room or vicinity, and switch themselves off or on. Or lights that can be remotely controlled through a network, either individually or as a group, without special wiring and controls.

But automatically turning lights on or off is not the only thing that smart lights can do. You can get lights with built-in

dimming capabilities, colour changing features, or ones that can be controlled with apps. You can even configure groups of lights that are capable of producing various "light profiles" appropriate for activities like reading, watching TV, or having a romantic dinner.

Types of smart lighting

Broadly, there are two types of smart lights available in the market: sensorintegrated and non-sensor integrated. Sensor integrated lights have the ability to 'sense' external stimuli like people and daylight, and automatically send data to the lighting network. The network will then set particular parameters for each light. With these kinds of lights, you also have the option to over-ride the automatic settings and control them manually if you so wish. Non-sensor lights lack sensor, they can also be considered 'smart' because you can program them.

The extraordinary control that you have over the functioning of the light makes them different from ordinary lights. Many smart lights can be remotely configured and controlled from your mobile phone, tablet or laptops, once vou connect to them via Bluetooth or Wi-Fi. A few can be controlled using Ethernet running over power lines (so you don't need a dedicated Ethernet port for every light fixture). The fact that the lights can be controlled remotely makes it possible to manipulate them from just about anywhere!

Benefits of Smart lights

There are a number of advantages of using smart lights. Here are some of the more significant ones:

· Ease of use:

Since smart lights can be can be controlled remotely, you are no longer slave to where switches are located. You switch them on or off from another room in the house, from your sofa or bed, or from a café or a public park. With apps allowing you to control the light intensity too, you can manipulate them to suit the task at hand-say for watching TV or reading, or even turn off automatically at a pre-determined time of the night.

Killer rigs

120

Building a rig? Don't know what components to include? Fret not, we'll sort you out.

Recommended buys

This is Digit pick of the best products to buy across several categories, updated every month.

Feature

Also, with systems that incorporate multiple lights, you have the option to group a set of lights together and program it to your needs. There is also the added comfort of not having to check if all lights are turned off when you're leaving home in a rush, or in a particular area of the home when it is not required. The bottom line is that the customization possibilities are incredible.

· Energy saving:

Smart lights can also help you conserve energy, and save on electricity bills. For instance, the ability to dim a light to suit requirements is hard to do with traditional lighting. Also, with motion sensors at work, the light can automatically adjust or turn itself on or off when needed. Then, there's the option to combine smart lighting with LED-based lights. Since the latter uses lower energy, it will cut power bills. Yet another way to save electricity is to coordinate smart lighting in your home with smart blinds and widow shades to enable maximum utilization of natural light.

• Setting profiles or scenes:

One of the coolest features of smart lights the ability to configure the lighting to match the task and mood. For instance, if you are reading you can have a setting that not only adjusts the intensity of the light, but also the light colour. For a kitchen or bathroom, you could set a 'morning' profile that gradually turns on lights and increases the brightness. A custom profile like 'Vacation' can be used to make selected lights go on and off in a pre-determined fashion to simulate an occupied home—and deter burglars.

• Colours:

Thanks to colour-adjustable lights, a new innovation, it now possible to illuminate a room in different shades and hues. So you could have a soft blue light to aid TV watching, or a bright white light for the kitchen from the same bulb.

The Future of Smart Lighting

Perhaps the most crucial change that smart lights have ushered in is the fact that lighting can now become an integral

WHAT'S AVAILABLE

Philips Hue

When it comes to creating a special mood in a room, Philips Hue is something of a specialist. Using its wireless system, not only can you turn the LED bulbs on or off but you can also choose the level of brightness as well as the colour. Also, the product gives you the option to recreate colours based on an image—say a sunrise image. You can program the light to switch on or off at a particular time, and even has a party mode that flashes the light in time with music.

The fact that Philips Hue is compatible with IFFT means that you get plenty of other modes of control like making the lights flash a particular colour when you receive a Facebook notification. IFTTT is an abbreviation for "If This Then That". It is a web-based service that allows users to create chains of simple conditional statements, called "recipes", which are triggered based on changes to other web services such as Gmail, Facebook, Instagram, and Pinterest.)

The starter pack for Philips Hue comes with three light bulbs, and a wireless base. Using the latter, you can manage up to 50 bulbs. A single bulb from the Hue family will cost you Rs. 2,699. Available at eBay.in

LIFX WiFi LED Bulb

This LED bulb lets change your lighting colour to match your mood, and functions using your existing WiFi. It can be used in conjunction with your smart phone, and the integrated music effects can pulsate the lighting in tandem with the music. The bulb is IFTTT compatible, and claimed to provide upto 22 years of illumination. *Price: ₹8,450.00. Available at fabtolab.com*

IFITech Smart Bulb

This is a LED Bulb with a built in motion and

daylight sensor. This bulb will automatically turn on upon sensing motion during the dark, and turn off in 60 seconds if no motion detected. Useful for washrooms, staircases and utility areas. The product claims a lifetime of 30,000 hours.

Price: ₹1,250. Available at amazon.in

IOTA Lite LED Smart bulb

Produced by the Indian technology firm, Cube 26, this 500 lumens dimmable model incorporates Bluetooth v4.0. Offering up to 16 million variations in colours, the product has such cool features as blinking lights for call alerts, music sync, modes for various settings and more.

Price: ₹1,499. Available at flipkart.com

3a Part 5 W LED EMIT Bluetooth Smart Bulb

3a's Bluetooth v4.0 enabled 500 lumens smart bulb comes with a purported lifetime of 25,000 hours. The product incorporates features such as colour-setting according to different moods, alarm function, remote control of brightness and automatic on/off.

Price: ₹2,399. Available at flipkart.com

Xiaomi Yeelight Smart LED

The Xiaomi Yeelight Smart LED comes with a Mobile app control using which you can manage up to ten lights via Bluetooth. Features include App timer switch, Music Rainbow- which is essentially a party feature, complete with throbbing lights. and also varying colours.

Price: ₹2,799. Available at eBay.in

Disclaimer: The specifications/price for the products mentioned may vary based on vendor/model. Images shown are representative only.

part of the design of the home, rather than a peripheral unit. You can use lighting to influence the character and utility of the home, and can change it at whim. Ease of use, better control, and the ability to leverage colour are some of the most significant changes that have occurred to make this possible—and we are likely to see many more useful features and capabilities being added like the ability to selectively focus a light or change the beam pattern.

As more and more household objects become Internet-enabled, smart lighting will gain the ability to interact with other objects in the home, enabling them make smart decisions by working in concert in a highly optimal way. Smart lighting also holds out the potential for customized and artistic lighting to be deployed widely in homes—and changed quickly to suit the situation and need. Your future home will look brightly different!

Agent 001



The Perfect Living Room

Check out this list of gadgets that should be a part of your living room to make it just perfect! http://dgit.in/PerfLR



'Bedtime Mode' in Phones

Experts say that a 'Bedtime Mode' is what needs to be added to phones immediately to fix our sleep http://dgit.in/BedtmMode

Time to re-accessorise

Agent001 shuffles through his accessory cabinet to see if anything needs replacing

Agent 001 agent001@digit.in

he need to replace your tools is an ancient dilemma. Even our ancestors who lived in caves would have had to grab hold of new flintstones every now and then as their older set wore out. It was either that or going back to rubbing sticks together and very few know how painful and time consuming that is. Life in today's world can be characterised similarly. You can either go about working with power tools and be able to focus your energy on coming up with innovative solutions or stick with hand tools and cancel that gym membership. For me, my tools are quite important and it's about time that I made a few well deserved additions.

When I'd purchased my Dremel 300, there were few stores that sold it and this was before the era of convenient online shopping. So as my drill bits wore out, and my cutting wheels turned into buffing wheels, I was forced to resort to jugaad to make do. I'd repurpose stainless steel nails with their heads chopped off as drill bits and superglue new sheets of emery paper onto my sanding wheels to keep the magic alive. So as I was browsing through various e-commerce portals looking for replacements one comment caught my eve. It'd mentioned a competing brand by the name of Proxxon. To satiate my curiosity I started digging deeper in order to compare the two products. Both are semiprofessional drill/grinders and boast of a wide array of accessories to complement the main tool. Proxxon doesn't market their tools as well as Dremel does and navigating through their website to look for a particular tool isn't exactly a walk in the park.



Coming to the main tool, it turns out that Proxxon's drills are actually quite good. You can vary its RPM like you can with the Dremel but it isn't as noisy as the Dremel! If you've spent an eternity grinding away at wood using Dremel then you'd be all too familiar with the constant ringing in your ears that sticks around for hours after you're done. And that's not it, with a Dremel you have to be careful with the amount of load you run it under, too much and the motor will burn out. Proxxon's drills use wave controlled motors are capable of maintaining constant levels of torque at low speeds so making finishing touches in a precise manner shouldn't take as much effort as it does with the Dremel. Lastly, the darn thing is German made! If you've ever bothered with trying out different tools without buying the cheapest one off the shelf then you'd know German made tools are known for their superior build quality and rigid QC. The only caveat is that they're a little expensive compared to other tools, so in all likelihood, it seems I'll be getting a new drill/grinder in a month or so. Availability seems to be a problem.

Another reason why my DIY projects have taken a back seat is because of my soldering iron. As I've moved away from

through-hole components and started fiddling with SMT components, the need for a refined iron has never been more pressing. Especially, since I've managed to burn a few transistors with my 50 W iron by not following the temperature curve or rather being unable to do the same since you can only turn the iron on or off. So I started looking for soldering irons with variable temperature. And it wasn't long before two particular brands came to my attention - Hakko and Weller. One's German and the other Japanese, and they both have excellent offerings with quite the fan following. The Hakko FX-888D is a 70 W variable iron that can go from 50 - 480 degrees celsius. While the Weller WES51 is a 50 W iron that goes from 175 - 450 degrees celsius. Both of these temperature ranges are more than capable of handling situations that most hobbyists like me are bound to come across. The Hakko happens to have a digital temperature counter while the Weller sports an analog dial, however, this wasn't the deciding factor between the two either. In the end it came down to availability of replacement parts and Hakko seems to have won my heart in this aspect as I don't want to spend another decade resorting to jugaad to get my work done for me.



Reddit blocked in Turkey

Following its censorship law, Reddit was banned in Turkey due to 'inappropriate content' but is back now. http://dgit.in/RedditBlckd



The 2Ku in-flight WiFi

The next geenration of in-flight WiFi is coming! Gogo to launch it next year. Read all here: http://dgit.in/gogowifi

Agent 001

A desktop upgrade

Dear Team Digit, First of all a very very happy Diwali to the Digit Team. I am a big fan of your awesome magazine. My system's configuration is:

- Motherboard GIGABYTE
- HDD 160 GB
- RAM 8 GB
- GPU NVIDIA GeForce GT210 1 GB DDR3
- · PSU 350 WATT Mercury brand
- PROCESSOR Intel Pentium Processor I want to upgrade my desktop's GPU and HDD. My GPU budget is around ₹5,000 ₹6,000. So could you suggest a good graphics card so I could play the latest PC games like Assassin's Creed Unity and Syndicate, COD Advanced Warfare, COD Black Ops 3, Witcher 3, etc., at medium-to-high settings. Thanks in advance.
 - Ratnapratim choudhury

Mey Ratnapratim, the configuration vou've listed does very little to shed light on what's in your computer since you've listed brands rather than the specific model numbers. But having looked at the remaining components, it's easy to say that your machine is far from being capable of running current AAA games at medium-to-high settings. Even a graphics card that costs ₹5,000-6,000 will not be able to run these games at medium settings, let alone high. So we'd ask you to prioritise getting an upgrade overall if gaming is what you wish to do primarily with this computer. Take a look at the Killer Rigs section within the magazine to get an idea of what you can get within a certain budget and go with that.

Gaming cabinet desires

Hey guys, I would like to buy a gaming cabinet and I've narrowed my options down to these two cabinets:

- CoolerMaster K281
- Antec GX 900
- My current PC configuration is as follows:
- Motherboard Asus M5A97
- Graphics card Sapphire 7770 GHz
 Edition
- · Processor AMD FX 8350 Black Edition
- · RAM Corsair Vengeance 8 GB
- SMPS Corsair VS550

What in your opinion is the better cabinet? What if I go for the CoolerMaster K281 based on cost because in 4 years from now I'd like to add another graphics card in CrossFireX. Or should I go for the Antec GX900. And which cooling fan is best because these cabinets have options for mounting five fans. Currently I'm using some normal iBall cabinet and when I play games like Shadow of Mordor my system freezes, with a few blue screens popping up every now and then the processor temperature rises annoyingly fast, which is my serious concern. Please help.

- Neerai Kamal

The two cabinets are quite similar to each other across a lot of aspects. The cut-outs on the main panel and the front I/O panel have the same set of options. So your decision could come down to the fact that the GX900 has five fan mounts and cooling is what you're primarily interested in. The GPU clearance is also very similar with a difference of just five millimeters between the two and both can handle multi-GPU configurations. As for cooling fans, you can't go wrong with Noctua. They are silent and are capable of maintaining high static pressure depending on the fan model.

A thin laptop

Dear Team Digit, I was hoping you would help me out with options about which laptop to buy.

Requirements: light weight, okay with a screen size of 13 inches if that means I can cart it around easily, conveniently, and without any fuss. Apart from ultraportability, another important aspect from a usage perspective that I will primarily be using this machine to use design software like Adobe InDesign and photo editing, video editing tools to from time to time. So it should be able to handle that workload, if the need arises.

I have no brand preferences Budget: ₹55k.

Do you have anything for me? Thanks in advance for all your help!

- Yolande

After carefully considering your needs and wants and the budget at your disposal, here's what I think: The ASUS UX305 FA is a worthy machine to buy, largely for ultraportability – not so much for its CPU / GPU performance, to be honest with you.

May I suggest the MacBook Air? The price of this machine will definitely go down come special holiday season deals and discount season (re: Christmas and New Year's)... near the ₹52k mark, I think.

Its onboard graphics is much better than the ASUS', and having used a MacBook Air myself, I can vouch for its performance to be better than the ASUS'.

Unfortunately, I haven't really tested many lightweight notebooks at that price point to be able to share other recommendations with 100% certainty.

A budget smartphone

Hi Agent 001, I urgently need to recommend a couple of family members a cheap and reliable smartphone between the ₹5k to ₹8k mark. Please help me decide the right candidates, if there are more than one recommendations that you're making. Thanks a lot for your quidance.

- Ishvar Mayawi

A Since the launch of the Moto G 3rd gen, Zenfone 2 and Xiaomi Mi 4i the competitive smartphone market has come down around the Rs. 10K range. But if you only have a 7K budget for a Smartphone, these should be your picks.

Meizu M2 is the younger brother of the Meizu M2 Note which was launched earlier. The phone features a similar design that's wrapped around a smaller 5-inch display. The display is a quite good and has a 720p HD panel. It is powered by a quad-core MediaTek SoC with 2GB of RAM. It also comes with 16GB of onboard storage which can be expanded up to 128GB via a microSD card. There is a 13MP camera at the back with a 5MP front camera and both are equally good.

Another phone that falls into the sub-7K category is the Yu Yunique. Priced at ₹4,999, the phone is the one to chose if you are looking for phones under the sub-5K price mark.

Just stick to these two recommendations for now. \blacksquare

Price Watch





Windows store targetedThis time its the Windows app store that is infected with apps trying to steal your sensitive information. Beware! http://dgit.in/WindowsStreTG

SPEND SMART

This month we have focuses on categories that a lot of you have asked for through in the past month. All-in-One PCs and Smartwatches it is, due to popular demand!

(整 意							
	ΔΙ	L-IN-ONE						
Brand	Model	Processor	RAM	Display Size	Resolution	Storage	USB 3.0	Price (in ₹)
Asus	ET2040IUK	Intel Celeron J1800	2GB	19.5 inch	1366 x 768	500 GB	Yes	20,990
Dell	3010	AMD E-Series E1-2500	2GB	19.5 inch	1600 x 900	500 GB	Yes	23,876
HP	18-5201IX	AMD APU Dual Core E1	4GB	18.5 inch	1366 x 768	500 GB	Yes	24,500
LG	Chromebase 22CV241	Itnel Celeron Dual Core (4th Gen)	2GB	21.5 inch	1920 x 1080	16 GB SSD	Yes	26,150
HP	18-5019IL	Intel Pentium J2900	2GB	18.5 inch	1366 x 768	500 GB	Yes	26,500
Lenovo	C260	Intel Celeron Dual core	2GB	19.5 inch	1600 x 900	500 GB	Yes	28,790
Dell	Inspiron 20-3043	Intel Pentium Quad Core	2GB	19.5 inch	1600 x 900	500 GB	No	28,891
HP	18-1315IX	AMD Zacate APU E1-1500	2GB	18.5 inch	1366 x 768	500 GB	Yes	34,990
Dell	Inspiron 2020	Intel Core i3	4GB	20 inch	1600x900	1 TB	No	37,990
Lenovo	C360	Intel Pentium Dual Core (4th Gen)	2GB	19.5 inch	1600 x 900	500 GB	Yes	40,790
HP	20-A251IX	Intel Core i3 (3rd Gen)	2GB	20 inch	1600 x 900	500 GB	Yes	40,980
Lenovo	C340	Intel Core i3 (3rd Gen)	2GB	20 inch	1600 x 900	500 GB	Yes	40,993
HP	20-R014IN	Intel Core i3 (4th Gen)	4GB	19.5 inch	1600 x 900	1 TB	Yes	42,500
Dell	Inspiron 3048	Intel Core i3 (4th Gen)	4GB	19.5 inch	1600 x 900	1 TB	Yes	42,990
Acer	Veriton M200 -H61	Intel Core i3 (3rd Gen)	2GB	20 inch	1366 x 768	500 GB	No	50,000
Lenovo	B50-30	Intel Core i5 (4th Gen)	8GB	23.8 inch	1920 x 1080	1 TB	Yes	69,888
Dell	Inspiron One 5348	Intel Core i5 (4th Gen)	8GB	23 inch	1920 x 1080	1 TB	Yes	79,999
Asus	Transformer P1801	Intel Core i5 (3rd Gen)	6GB	18.4 inch	1920 x 1080	1 TB	Yes	1,15,000
Lenovo	Premium A740	Intel Core i7 (4th gen)	8GB	27 inch	1920x1080	1 TB	Yes	1,29,000
Apple	iMAC ME089HN/A	Intel Core i5 (4th Gen)	8GB	27 inch	2560 x 1440	1 TB	Yes	1,42,900

			S	MART	WATC	HES			
Brand	Model	Processor	Display Size	Screen Resolution	Battery	Heart rate sensor	Internal storage	Weight	Price (in ₹)
Spice	Smart Pulse M-9010	Mediatek MT6260	1.57 inch	320 x 240	420 mAH	No	NA	52.5g	3,590
Alcatel	One Touch	NA	1.22 inch	240 x 204	210 mAH	Yes	NA	60g	7,999
Motorola	Moto 360 (First gen)	TI OMAP 3 at 1.0 GHz	1.56 inch	320 x 290	320 mAH	No	4GB	49g	13,999
Pebble	Time	ARM Cortex-M4 at 100 MHz	1.25 inch	168 x 144	140 mAH	No	16MB	42.5g	16,740
Sony	Smartwatch 3	Quad ARM-A7 at 1200 MHz	1.6 inch	320 x 320	420 mAH	No	4GB	45g	17,752
Pebble	Time Steel	ARM Cortex-M4 at 100 MHz	1.25 inch	168 x 144	140 mAH	No	16MB	116.3g	23,740
Samsung	Gear S	Dual core at 1 GHz	2.0 inch	360 x 480	300 mAH	Yes	4GB	84g	24,900
LG	Watch Urbane	Snapdragon 400 at 1.2 GHz	1.3 inch	320 x 320	410 mAH	Yes	4GB	45g	29,900
Apple	Watch (38mm)	Apple S1 at 520 MHz	1.5 inch	340 x 272	205 mAH	Yes	8GB	40g	30,900
Apple	Watch (42mm)	Apple S1 520 MHz	1.65 inch	390 x 312	250 mAH	Yes	8GB	50g	34,900

INTRODUCING THE ALL NEW ARCHER C2600

WITH BLAZING SPEED OF 2600MBPS AND MULTI-USER MIMO TECHNOLOGY, THE ARCHER C2600 IS THE PERFECT EXTREME WI-FI SOLUTION FOR ENTERTAINMENT AND GAMING ENTHUSIASTS

router designed for the future is how we would define the powerhouse AC2600 Wireless Dual Band Gigabit Router – Archer C2600. Featuring speeds as high as 2600Mbps combined with a Multi-User MIMO technology, a 4-stream 11 AC wireless technology, and a 1.4GHz dual core processor, the Archer C2600 delivers flawless and seamless Wi-Fi performance during high-bandwidth activities like multiplayer online gaming and multi-device video streaming.

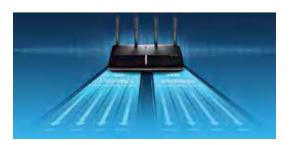
WHAT IS MU-MIMO?

The next generation of Wireless AC technology, the Multi-User MIMO lets the Archer C2600 serve several mobile phones simultaneously at speeds that are up to 3X faster for all devices on the network. Unleash the full power of your high-performance PCs, smart TVs, and consoles by using this router to seamlessly stream 4K HD videos and play games across multiple devices at once with MU-MIMO, powered by Qualcomm® MU | EFX.

WHAT MAKES THIS ROUTER SO POWERFUL?

The router is equipped with a 4-stream 11 AC wireless technology thanks to which its highest Wi-Fi speed multiplies to maximize performance. It leverages this power to deliver four independent, yet sharable, spatial data streams across all internet-enabled devices including smartphones, tablets, TVs and game consoles. The powerful 1.4GHz dual-core processor also ensures the smooth handling of simultaneous surfing, streaming, and gaming.

With four long-range external antennas and highpowered amplifiers, the Archer C2600 provides extensive network coverage, maximizing the signal strength





PRICE & AVAILABILITY:

The Archer C2600 will be available in all markets starting 20-Nov-2015 for Rs 15699 INR.

For more details, visit:

http://www.tp-link.in/ For review units and queries on availability in your region, please contact gaurav.rawool@tp-link. com with your credentials. so that users can stream videos and game freely without losing their wireless connections. The router's beamforming technology also lets wireless signals be picked up by specific devices so as to enhance the home networking environment.

FAST & FURIOUS

To maintain a superior quality experience across multiple devices, the Archer C2600 utilizes its dual 2.4GHz and 5GHz bands to reach a combined blazing speed of 2600Mbps, delivering more than two gigabits per second. The Archer C2600 has four Gigabit Ethernet ports for easy connection with other internet devices, and two USB 3.0 sharing ports for data transfer ten times faster than the USB 2.0 standard.

WANT MORE? YOU GOT IT:

- LEDs can be turned off at night to prevent distraction, especially if the router is located in the bedroom or near furniture.
- The Tether App lets you configure the router via your fingertips.
- Quality of Service (QoS) by device and application

Basic rig = ₹21,738 ■ HTPC = ₹31,521 ■ Entry-level gaming = ₹52,420 ■ Mid-range gaming = ₹74,187 ■ Ultra high-end = ₹2,77,288 ■ Digit Test Rig= ₹3,81,283

BASIC RIG

ASRock Beebox N3000-NUC Bare-	9,959
bone	· ·
Intel N3000	0
802.11ac + Gigabit Ethernet + Blue-	0
tooth 4.0	
ALC283	0
1x USB 3.0 + 1x USB 3.0 Type-C	0
Windows 10	0
Adapter included	0
Logitech MK220 Wireless Combo	1142
Bundled	0
Gskill F3-1600C11S-4GSL	1,639
SanDisk SSD PLUS 120 GB	3,299
(Excluding Monitor)	16,039
Dell E1916hv 18.5 inch LED	5,699
	₹21,738
	bone Intel N3000 802.11ac + Gigabit Ethernet + Bluetooth 4.0 ALC283 1x USB 3.0 + 1x USB 3.0 Type-C Windows 10 Adapter included Logitech MK220 Wireless Combo Bundled Gskill F3-1600C11S-4GSL SanDisk SSD PLUS 120 GB (Excluding Monitor)

ENTRY-LEVEL GAMING

AMD FX8320	11,336
Gigabyte GA-970A-DS3P	7,300
ADATA Premier DDR3 4 GB (2x 2 GB) 1600 MHz RAM	1,850
Seagate Barracuda ST1000DM003 1TB	3,591
ASUS R7 360 2GB	10,415
Corsair VS450	2,340
Philips MMS4040F - 2.1 Channel	2,899
ASUS DRW-24D3ST	990
Logitech MK200 (Bundle)	771
Logitech MK200 (Bundle)	0
None	0
(Excluding Monitor and Cabinet)	41,492
ASUS VS228HR	8,178
Antec X1-T Gaming	2,750
	₹52,420
	Gigabyte GA-970A-DS3P ADATA Premier DDR3 4 GB (2x 2 GB) 1600 MHz RAM Seagate Barracuda ST1000DM003 1TB ASUS R7 360 2GB Corsair VS450 Philips MMS4040F - 2.1 Channel ASUS DRW-24D3ST Logitech MK200 (Bundle) Logitech MK200 (Bundle) None (Excluding Monitor and Cabinet) ASUS VS228HR

ULTRA HIGH-END GAMING

CPU + Cooler	Intel Core i7-6700K + Antec Kuhler H20 650	33,487
Motherboard	ASRock Z170 Extreme6	15,700
RAM	Corsair Vengeance (2x 8 GB) CMK- 8GX4M1A2400C14R	9,810
HDD	WD WD30EZRX 3TB + Samsung 850 Pro 256GB SSD	19,364
Monitor	ASUS PB279Q 4K UHD	62,500
Graphics Card	MSI NVIDIA GTX 980 Ti GAMING 6G	56,700
Cabinet	Corsair Obsidian Series 750D	11,199
PSU	Antec HCP-1000 Platinum 1000W	16,750
Speakers	Logitech Z906 5.1	17,695
Optical Drive	LG Blu-ray WH14NS40 RW	5,999
Mouse	Logitech G502 Proteus Core	4,770
Keyboard	Corsair Vengeance K70 RGB	14,115
Sound Card	ASUS Xonar D2X 7.1	9,199
Total		₹2,77,288

HTPC

Processor	AMD A10-7700K	10,000
Motherboard	ASUS A88XM-A	6,197
RAM	G.Skill RipjawsX DDR3 4 GB (2 x 2 GB) PC RAM (F3-12800CL9D-4GBXL)	2,137
HDD	Western Digital WD30EZRX 3TB	8,715
Graphics Card	None	0
PSU	Corsair VS450	2,340
Speakers	None	0
Optical Drive	ASUS DRW-24D3ST	990
Mouse	Logitech MK220 Wireless Combo	1,142
Keyboard	Bundled	0
Sound Card	None	0
Monitor	None (your TV)	0
Cabinet	Cooler Master N200	3,550
Total		₹31,521

MID-RANGE GAMING

Processor	Intel Core i5-4460	11,490
Motherboard	ASUS B85M-GAMER	6,284
RAM	Kingston (2x 8 GB) HX318C10F/8	5,900
HDD	Toshiba 1TB DT01ACA100	3,489
Graphics Card	Gigabyte GTX 960 GV-N960WF20C- 4GD	18,700
PSU	Corsair VS650 650W	4,108
Speakers	Harman Kardon Soundsticks III	8,999
Optical Drive	ASUS DRW-24D3ST	990
Mouse	CM Storm Devastator (Bundle)	3,299
Keyboard	CM Storm Devastator (Bundle)	0
Sound Card	None	0
Sub-total	(Excluding Monitor and Cabinet)	63,259
Monitor	ASUS VS228HR	8,178
Cabinet	Antec X1-T Gaming	2,750
Total		₹74,187

PRIMARY DIGIT TEST RIG

Processor	Intel Core i7 - 4960X (Extreme Edition)	71,950
Motherboard	ASRock X79 Extreme 9	27,846
RAM	Corsair Dominator 2133MHz (8GB x 4) (CMD32GX3M4A2133C9)	27,710
HDD	Toshiba DT01ABA100V	3,830
SSD	SanDisk Extreme II 240GB (x2 for HDD testing)	34,000
PCIe SSD	Kingston HyperX 480GB	28,999
Graphics Card	Zotac GeForce GTX TITAN X	86,990
Cabinet+ Cooler	Cabinet (NA) + Intel RTS2011LC - Stock AIO	NA
PSU	Corsair HX1050	16,059
Monitor	ASUS PB279Q	62,500
Optical Drive	NA	NA
Mouse	Razer Ouroboros Elite	9,899
Keyboard	Tt eSPORTS Meka G1	11,500
Total		₹3,81,283





TOP 3GAMING HEADPHONES

Brand	Model	Price (in ₹)
SteelSeries	Siberia V2	5,693
Kingston	Hyper X Cloud	5,771
Razer	Kraken 7.1	9,499



Brand	Model	Price (in ₹)
Synology	DS214	34,865
Thecus	N4310	32,456
Thecus	N2310	32,500



Brand	Model	Price (in ₹)
Seagate	Backup Fast	20,890
Wetern Digital	My Passport Pro	33,999
Seagate	Backup Plus Desktop	12,152



TOP 3HEADPHONE AMPLIFIERS/

Brand	Model	Price (in ₹)
FiiO	Kilimanjaro2 E11K	4,099
FiiO	Mont Blanc E12	8,999
Audinst	HUD MX-1	12,000



Brand	Model	Price (in ₹)
Dell	Inspiron 11-3148	40,690
HP	X360 11-k106TU	42,990
Lenovo	Yoga 300	31,600



TOP 3CPU LIQUID COOLERS

Brand	Model	Price (in ₹)
NZXT	Kraken X61	14,959
Thermaltake	Water 3.0 Ultimate	12,778
Corsair	H100i Extreme	14,092



TOP 3 GAMING KEYBOARDS

Brand	Model	Price (in ₹)
Corsair	K95 RGB	14,999
Razer	Blackwidow Chroma	13,899
Tt eSport	Posiedon Z	6,855



TOP 3 SOUND CARDS

Brand	Model	Price (in ₹)
Asus	Essence STX II	21,999
Asus	Xonar Essence STX I	10,990
Creative	Sound Blaster X-Fi Titanium HD	16,999



FITNESS TRACKERS

Brand	Model	Price (in ₹)
Jawbone	UP2	9,999
Fitbit	Charge HR	12,990
Xiaomi	Mi Band	999



Brand	Model	Price (in ₹)
Intel	750 Series (1.2TB)	82,999
Kingston	HyperX Predator (480GB)	48,000
Samsung	850 PRO (256GB)	10,649

Tech @ Work

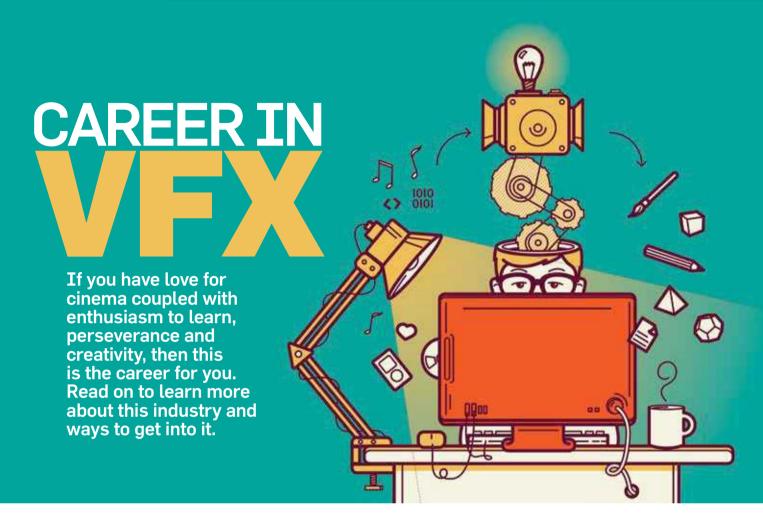
Industry Connect

We talk to Canon, Ford Mobility and Mavin to catch up on some of the interesting industry developments.



Before you take a selfie!

You think you know everything about Selfies? Read this for the ultimate in selfie knowlede http://dgit.in/SelfieRsch



Infancia Cardozo readersletters@digit.in

omputer generated effects aren't just for futuristic movies and superhero films any more. They're everywhere. Switch on your TV and a CG effect is probably hidden in one of the movie scenes or advertisements you're watching. Visual effects (VFX) is not meant to be noticeable, and that takes some serious talent and hard work. During the course of your special FX career, you'll work with lots of raw footage to transform it into a work of art. All you'll need is knowledge of relevant software, an artistic bent of mind, some engineering skills and a basic understanding of physics, which will help avoid glaring mistakes like a well-built Arnold in 'Terminator 3: Rise of the Machines' lightly bouncing off the street like he weighed next to

nothing. So, if you're ready to enter this field, let's look at what you can expect.

THE INDIAN VFX INDUSTRY

When the official trailer for India's most expensive movie 'Baahubali' was released on YouTube, it garnered more than 60 lakh views and 35,000 likes thanks to the two-minute long clip featuring lush landscapes of mountains and waterfalls,



Danny Wilson, Creative Supervisor at Lighthouse Animation Studios

temples and palaces and battlefields - all made possible by 17 VFX studios with 600 artists. Surprisingly, the VFX studios hired for this job were based out of Hyderabad, home to Tollywood. Proving we're finally moving away from being just a post-production visual effects sweatshop for Hollywood movies like 'Life of Pi' and 'The Golden Compass' to actually making our own content like special FX studios, Zentrix, Lighthouse Animation Studios, Prime Focus and Studio Eeksaurus are doing today.

"India is currently well positioned in the global VFX industry", says Danny Wilson, Creative Supervisor at Lighthouse Animation Studios. He continues, "This is due to the latest technology and equipment now easily accessible at affordable rates in the country, making it easy to start a company or project". Due to this and the amount of visual effects these projects call for, VFX studios are popping up everywhere.



Microsoft is striving to bring affordable internet for all by launching a new fund to achieve this goal. http://dgit.in/McrosftFund



Yes. I'm safe

Amid mixed reactions about the feature, Facebook reportedly is planning to continue its efforts http://dgit.in/FBSafetyChk

Work@tech

WHY VFX IS EXCITING TODAY

The sheer number of studios in India now along with the increased collaborations among them has made this industry an undeniable breeding ground for aspiring VFX artists. Suresh Eriyat - Founder and Creative Director, Eeksaurus says, "VFX has the potential to create huge employment opportunities, however, that is subject to collaboration and close co-operation between the VFX entities of India. If they stand alone and compete against each other, the industry's growth will be stunted. In Bahubali, I'm told that 17 VFX companies worked together. Such collaboration is a welcome trend for the industry as a whole."

TV networks, production houses and ad makers are sitting up and taking notice of this development - both abroad as well as locally - and teaming up with special effects companies in India to reap the additional benefit of cost cutting. Danny suggests yet another advantage of this collaboration: "More people can get involved at the independent level as well to get more creativity so it doesn't get bogged down to the big studios only, in turn encouraging a bit more out-of-the-box thinking, making it an exciting time to be in the VFX industry."

BRIGHT FUTURE, HERE I COME! OH WAIT...

"No VFX artists were harmed in the making of this film" should ideally appear at the end of film or television credits. We don't mean to scare you, but there are some challenges working in VFX. This industry is only for the strong-willed hard workers who persevere under tough conditions such as long hours and lack of projects.

E. Suresh of Eeksaurus advises you to expect a 10-hour day during the normal in-flow of work and around 15 hours a day during peak work season. "Work, when it comes, would seem like a never-ending story. This coupled with multiple changes from clients keeps every professional on their toes." If you love what you do however, time flies. Also, remember, you'll be surrounded by talented artists, innovators and veterans from the industry along-



Concept art by Firefly for the Kalakeyas

side whom you'll be working, so you can expect to learn more than just the basics (read: things you won't learn in a training institute ordinarily).

Another necessity for a successful career in special FX is the right kind of employee. If a company hasn't done its due diligence, it may suffer or end up shutting down and you'll be left with nowhere to go. Look at Rhythm and Hues that was forced to shut down after its thumping success at the Oscars for Life of Pi. Danny states, "You don't want to work with a company that gets too big too fast. There are VFX studios that have a strong start but they don't have the longevity to continue, to be able to foresee the next thing that happens ('Now this is happening, so the next thing has to be this' kind of thought process). So if a studio is letting go of employees or not paying their employees, it's because the work isn't there. The work is out there. You have to get your people to get the work into your studio. The key to a successful VFX studio is to have a strong clientele, a strong marketing backbone. The more VFX studios bring in international clientele, the better



Suresh Eriyat, Founder and Creative Director of Eeksaurus

the exposure for these artists to grow and flourish and become something more."

Suresh Erivat advocates working with studios that collaborate with each other (like the studios involved in the post production of Baahubali did), rather than ones that try to outdo each other and try to create their own VFX empire. So you have a level of security knowing you have growth in the future.

WHAT KIND OF MONEY TO **EXPECT**

As a fresher, you can expect to earn around ₹15,000-20,000 and once you gain adequate experience, anything from a lakh to a couple of lakhs and more is yours for the asking. And if you can't decide whether to take on freelance projects or a full-time job, remember that freelancers are often paid more since they work on contract-based jobs, however, the amount of pay they rake in is undoubtedly based on their level of talent and experience. There's a caveat though. As a freelancer in the VFX industry, as with any field, there's no stability.

WHERE TO STUDY

There are different ways to get into the VFX industry and not all of them require an education. However, one criteria in common with recruiting departments across the board - a set of skills, which includes technical problem solving skills, a good eye for detail, creative bent of mind, basic drawing skills (so a background in Fine Art would be great, although not necessary), a solid understanding of photography and the interplay of light, color and shadow.

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FB's disappearing msgs?

Reportedly, Facebook is working on a similar feature like of snapchat, disappearing/self destructing messages! http://dgit.in/FBMdestruct

Different approaches to learning 1. Self-study/On-the-job training

There are a couple of ways by which you can get your foot in the door. One is by self-study and practice. There are students who've gained employment based solely on talent, enthusiasm and knowledge gained by themselves. As long as you have a good grasp on overall design, you'll be welcome anywhere. You can hone this craft from within your home (by say, watching tutorials on YouTube) and



India-based Anibrain worked on Guardians of the Galaxy

outshine others who've spent a fortune on university degrees and courses. "The most expensive school might not be the best school if it's not the right school for that particular artist," reiterates Danny of Lighthouse Animation Studios.

He further emphasizes, "It's one thing to know how to use a program, whatever program that may be. Anybody can learn how to use a program - what happens when you click here, what happens when you drag here, when you do this or that. It's another thing to implement your talent through that program." Most often it's only a matter of building on the areas in which you're strong and incorporating the skills in areas in which you're less so. Then, once hired - either in a paid position or as an intern initially - you can pick up additional skills on the job to add to vour resume.

"If you're a fresher and you get in with a decent VFX company, then this is the best school. Now you go to these VFX schools which are good because they teach you the basics, but once you know the basics, the best thing to do is get out there and know the industry because you can't learn the industry in the classroom. You'll understand how it works by experiencing it yourself. So the best thing to do is work

with a VFX company under the guidance of a VFX supervisor, producer and often a digital effects supervisor."

2. Training schools and related institutes

Another way to learn the ropes is by joining VFX training schools and related institutes, either part-time or full-time, in person or online. These will take you six months to two years to complete based on the kind of course you choose and set you back by more than a lakh. Further, you must meet minimum educational require-



Nuke, a software tool you'll soon be working on like a pro

ments to get into a good training school, however this varies from institute to institute. "While some training institutes like FX School and NID take in candidates who've passed out of Class 10 and Class 12. respectively (from a recognised board. of course), others like Arena Multimedia accept students from all kinds of backgrounds," says Sekhar Mukherji, Head of Animation, National Institute of Design.

There are barely any specialised courses in India, so it's no surprise that

RECOMMENDED INSTITUTES

- · Anibrain XDI, Pune
- DSK SupInfocom, Pune
- National Institute of Design (NID), Ahmedabad
- Whistling Woods International Institute, Mumbai
- Maya Academy of Advanced Cinematics (MAAC)
- Frameboxx Animation & Visual Effects
- Xplora Design Skool (XDS)
- Raffles Millennium International, Bengaluru
- Industrial Design Centre (IDC), Mumbai

many VFX artists begin their careers with courses in fields other than VFX. For instance, they'll study Animation Film Design at NID. Visual Communication at Industrial Design Centre (IDC) or film making (sound, direction, editing, etc) at Film and Television Institute of India. where they achieve a wholesome experience by learning the way the industry is structured, pick up things relevant to their interests and then work in an industry of their own choice. "If the student is intelligent enough they pick up quickly," says Sekhar. He continues, "Three animation graduates from NID are today part of Firefly Creative Studio, one of the VFX studios that worked on Baahubali". Companies are more interested in whether you can help run their business, rather than where you've studied.

Further, while training focus at institutes like Maya Academy of Advanced Cinematics (MAAC), Whistling Woods Studio, Xplora Design Skool (XDS) and Frameboxx is on visual FX, they only teach you the software and its applications. Hence, most VFX artists that we have today are those who have learnt on their jobs.

IS IT WORTH STUDYING VFX ABROAD?

The allure of studying abroad can be intoxicating, so it's best to weigh the pros and cons before making the move. One thing is for sure: It will improve your marketability and provide you with better exposure on a global scale. Also, industry experts advise that if you want to work abroad then studying abroad is recommended. However, that doesn't mean that if you study in India, you won't be able to work outside the country.

A DAY IN THE LIFE OF A TYPICAL VFX ARTIST

Despite it being a job with long hours, "it's a fun environment to work in considering there's a constant influx of ideas and inspiration to gather. Your coworkers are your family because you're sitting there next to each other. Each department has to work together." says Suresh. Also, no two days are the same, which means you won't be working the



Driving too slowly?

What happened when Google's self driving car was caught for driving too slow? Check it out: http://dgit.in/GSlfDrvngCar



YouTube Music

YouTube's new Music app is here! Check out its features in this first impressions video: http://dqit.in/YTMusicFI

Work@tech

same schedule all the time nor will you be doing the same work every day.

Overtime, which sometimes means spending a night or two at the office, may only be needed to be put in if a project deadline sneaks up. However, if the studio has planned the work for its employees in a way that takes into consideration their work/life balance then this shouldn't be a regular occurrence.

Similarly, the kind of work you do won't be the same every day. "In the FX department, for example, you're doing water simulation one day, and fire the next. The amount of work will also fluctuate. You might have less work on one day and triple the amount of work the next day," says Danny

FINAL WORDS OF ADVICE

This is a competitive industry and the supply of VFX artists exceeds their demand, so there are a couple of things you can do to stand out. "Stand out by



VFX effects in Mahadev were quite elaborate for being just a TV serial

showing you're willing to learn and doing what's necessary to get things done. Show that you're a team player. Someone who says 'I'm in the FX department but I want to see what goes on in the other department displays flexibility'. Individuals who want to branch out, grow and understand the industry as a whole stand out better than artists who say "This is what I do and this is the time I do it in'. That kind of attitude won't make you stand out." says Danny. "And then, there will be a job where the

artist is told what to do what they must do, but then there comes a job where you'll be asked to get more involved in the creative side and if you're not prepared to do that and the person sitting next to you is, then you'll lose out on that opportunity. Assignments require flexibility, so if you're not prepared you could be overlooked for the next guy."

Suresh advices, "With new ideas that are relevant to the time, freshers would have the potential to beat the competition. They should also be able to let go of ideas that have been rejected and ready to work on fresh concepts. This will show clarity of thought and a vision to excel."

Once you're ready to approach employees, you'll need to have a showreel ready that will best showcase your abilities to potential employers. This reel will have to be built over time since it requires a lot of effort. Also, this portfolio will keep you armed and ready to present yourself for a range of roles in creative media.

SOME JOB ROLES IN THE VFX INDUSTRY

- Accessory Designer
- Animator
- Compositor
- · Environment Builder
- · Lighting Artist
- · Matchmove Artist
- · Matte Painter
- · Modeling Artist
- Production Assistant

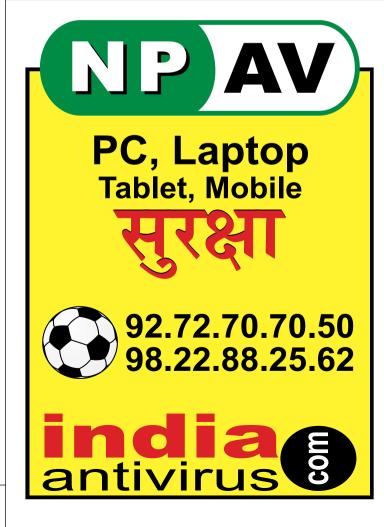
- Production Designer
- Render Wrangler
- · Rigging Artist
- · Roto Artist
- · Texture Artist
- VFX Director
- VFX Supervisor/Team Lead
- · Weapon Designer

INDUSTRY-STANDARD SOFTWARE

- Adobe Photoshop
- Adobe After Effects
- Autodesk Maya
- Ruine / X Frog
- Vue

- · Bojou / Syntheye
- · The Foundry Nuke X
- Apple Final Cut Pro
- Apple Soundtrack Pro

While industry standard software is being developed daily and different studios work with different packages based on what the project in hand calls for, the skills you learn in one package will be transferrable to another. For example, you could learn and actually use 3D with Blender (for free) and then be able to pick up another package like Maya pretty quickly. Also, while there's no standard set of apps used across studios, the workflows are very similar.



Industry Connect



Quora's 'Writing Sessions'

Quora to host 'Writing Sessions', a live Q&A session similar to Reddit's AMA! http://dgit.in/QuoraWS



Workchat by Facebook

Facebook launches a new version of messenger for Facebook at Work called Work Chat. http://dgit.in/FBWorkChat



Gigato's Toll Free internet

Shailesh Nalawadi, CEO of Mavin, on how Gigato aims to spread "more internet, in more places, for more people" without violating net neutrality



♦ Shailesh Nalawadi CEO. Mavin

Siddharth Parwatay siddharth.parwatay@digit.in

d What is Mavin and where does Gigato fit into the overall picture?

Sailesh: Mavin is the company and Gigato is our first product. The founders of the company have in some capacity or the other worked on internet related technology over the last 15 years. Our strong feeling was that wherever possible providing more internet access for more people in more places is unambiguously a good thing for society. So we started with a very high moral concept saying what can we do to spread internet access to more places and particularly in emerging markets like India where we have 130 million smartphones in circulation within the country but only 60 million 3G connections. So our goal was what can we do to spread the internet and that's why we started Mavin. After a lot of deliberations and trying few different things we decided to go to markets with a very specific product which we felt bolsters the long term vision of the company and that product is Gigato. What Gigato does is that it provides a platform which allows mobile app developers to pay for the data that their users consume. Think of this as toll-free data. We have today, the concept of toll-free

numbers right? All these 1-800 numbers which if you call you do not incur the call charges. So our concept is very similar, except that the icon of an app on your smartphone that is toll free. So you can use that without paying for any data charges whatsoever.

How does the arrangement work between you and the app developer that comes on board Gigato?

Sailesh: They come to us and say we're interested in sponsoring certain amount of engagement. We want to reach a certain segment of our community of users, and we want to reward them up to a certain amount of engagement and how much the engagement is, depends entirely on the app. If you are a music streaming application, it comes down to the number of minutes of music. If you are a shopping application, it might come down to minutes you spend browsing or it may come to the number of pages that you view. Similarly with news applications they might say we want readers to read ten news articles or watch three news videos without incurring data charges. So that's the way our mobile apps think about it. When they come to us we take that idea and we convert it into specific megabytes that they have in mind, whether it is 10 MB

of streaming music or 15 MB of surfing on say Amazon or say 20 minutes of reading news on Times of India. And then we launch a promotion within Gigato that would say use 'x MB' of this streaming music app for free. The only thing that the app developer has to worry about is how many overall megabytes of promotion did I incur. We send them a consolidated bill that says here's all the megabytes that were consumed during our promotion via your application and that is the bill they pay. What does the consumer get? The consumer gets to use the app without worrying about data charges. If they are sitting on a bus heading home, there is a big traffic jam, they can listen to some music, maybe they can read the news or order their kathi rolls that will be waiting for them by the time they get home.

Interesting. So you guys have tied up with the operator or network. How do you channel all that data? Is it some kind of deep packet scanning that you do to allow those data bits to transmit for free or what is the system?

Sailesh: So, just to be clear, what you are describing is zero rating - when you are looking at the packet and saying this packet is free and this packet is not free - we don't do that. All we do is on your



hours of which 20 MB were free and we

basically say that you have earned a 20

MB data refund. We keep track of all the

earned data and when the earned data

refund gets to 150, we give you a data

d Even Internet.org with all its goals in

the right place did come under the scan-

ner for violating net neutrality. So, does

Sailesh: Yes, we all believe that it is

who can't afford it. There are many

your concept violate net neutrality in any

important to bring lots of people online

approaches of doing it and yes some of

those approaches do violate the spirit of

network neutrality. Network neutrality

internet to get where we are today, and it

is going to continue to keep the internet

neutrality for a couple of reasons: First

free. Our approach is in fact pro net

of all, you have to use your data and

then you get a rebate. The data pack

that you can use on any application!

that you get back from Gigato, has no

strings attached to it. It is 150 MB of data

You need not use it only on the applica-

is important because it has helped the

pack of 150 MB.

way? And if not, how?

Google Now gets Smarter

Reports suggests Google Now gets more smarter and ability to understand complex questions http://dgit.in/GglNowSmartr



phone our app looks at the consumption of data of the sponsored application, measures the consumption of data and then basically says that you have used, as an example, 22 MB of Saavn in 24

little questionable because it would mean that only established players with deep pockets can potentially come on board if they are intending to subsidize their users internet charges.

Sailesh: Look, that is an issue, but not a net neutrality issue. It has never been illegal to give cashbacks. It has never been illegal to aggressively discount your product. It does not violate network neutrality. Net neutrality talks about a different set of principles.

It talks about creating preferred highways for certain set of people. But in a way, at least in spirit, this seems to be the same thing. I'm not talking about breaking any laws.

Sailesh: Neither am I. I'm talking about the spirit of net neutrality as well. The question is, does someone giving you a cashback make it harder for smaller parties to participate in a business? If there is a shopkeeper, who says come to my store and buy rice and I will pay the bus charges that you incurred in coming to my shop, does that create unfair advantage? Well, if you say it does, that's what a free market is all about. Net neutrality is about a different set of things. There are no laws yet, the laws are being formulated, but the principles around which we all discuss, are principles of net neutrality and often in this discusit requires working closely with an operator and the only operator that it works with it in India is Reliance. But what we do works on all operators in all circles which is important for us because when we go and work with say a Jabong or TrulyMadly or Faasos, in some sense they don't really care who your operator is. They want your business and they want to reward your loyalty. They going and buying a data pack for say the Mumbai circle from Vodafone for you, and an Idea data pack for someone else.... that's too much complexity for them.

■ So within your set of partners, do you try to safeguard existing partners from a "conflict of interest" type of situation? For eg. If Jabong is on board, would you get Myntra on board?

Sailesh: Not true. Everybody gets to come on board and we tell all our partner that there is no exclusivity. It is absolutely in my interest to have more people, more apps on this platform because then there is higher likelihood that more the apps that you use on a regular basis are sponsoring data. And that is important to me, because conceptually I want to bring down your cost of the internet. This is about putting more megabytes in pockets of consumers.

■ Lofty ideals, serving greater good – I'm on board with all of that. Though the question arises – what's Gigato's business model?

Sailesh: We charge for every megabyte that we give out to users. The app developers have to pay for that and we take a small commission on top. For every user that's on our platform there's also a fee. But basically the model is: there is a cost per megabyte (which we purchase) plus we charge a small commission to the app developer.

In effect we are buying data packs from the operators and it is exactly the same price that you would pay for a data pack so we don't even get any preference from them.

This was just an excerpt, to read the full interview with Shailesh Nalawadi, Blipp this page.

"What Gigato does is that it provides a platform which allows mobile app developers to pay for the data that their users consume."

tion that gave you that data. Second is, any service provider can decide "Hey I also want to get in this action and I also want to reward my users by giving free internet." So we are not precluding anyone, and the third thing is everybody on our platform pays the same per megabyte charges. There is no backroom deals that says that jabong pays less but flipkart pays more!

With the point one and three, I can fully agree with, but point two, I find it a sion on "Save the Internet", the issue of small player vs the big player comes into play. It kind of creates more confusion on the entire discussion on net neutrality that's the distinction I wanted to make.

I get it. Nice analogy by the way.

Sailesh: Yes! So Internet.org focuses on some of the problems, which is that they kind of handpick who is in the internet. org ecosystem and who is not. They are now trying to change that. Second,

Industry Connect

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Voter is an app which asks you questions and based on your political leanings and suggests a candidate! http://dgit.in/VoterApp



Goodbye, Password Key

Password key shuts down, making way for Intel's True key, a password manager launched this year http://dgit.in/PwdBshuts



Things that make Ford go vroom!

Just like our modern lives, locomotion isn't untouched by revolutionary tech. To get a sense of how cars, in particular, are evolving to adjust to our increasingly smarter, responsible lifestyle. we reached out to Julius Marchwicki, Director, Connected Vehicle Services, Ford Motor Company.

Julius Marchwicki, Director, Connected Vehicle Services, Ford Motor Company

Javesh Shinde jayesh.shinde@digit.in

Just how close are we to realizing fully autonomous vehicles on the road? What's the serious timeframe that you're anticipating this to happen throughout the world? **Marchwicki:** At Ford, we believe the path to autonomous driving will come in phases. We're already manufacturing and selling semi-autonomous vehicle features that use software and sensors to steer into parallel or perpendicular parking spaces, adjust speed based on traffic flow or apply the brakes in an emergency. We have fully autonomous vehicles in development - with research vehicles already on the road. We are excited by all the innovation occurring and know the increased attention will not only speed-up the technology but also help align industry, regulatory and economic leaders. Fully autonomous driving likely will be possible with the right combination of environmental, regulatory and economic factors.

d What are some of the challenges and opportunities of developing autonomous vehicles? Is it because we are lazy? Marchwicki: Laziness is definitely not a reason. Autonomous technology brings visions of being more productive, safer and more efficient. Everyone dreams of reading the paper and drinking a coffee

while being driven to their destination. As the technology continues to develop, we will rely on the well-defined regulatory framework and broad public trust on issues of safety and security. While autonomous cars incorporate sophisticated safety features, human inputs will remain critical to their correct usage. To help learn about this input, our semiautonomous technologies are helping reduce human error in driving and improve safety.

Autonomous vehicle technology is another step closer to production at Ford, moving from a research effort to an advanced engineering program, the company announced today.

d According to you, what is smart mobility? Is it beyond just short-term gimmicks, features and functionality that actually help the consumer in the long run?

Marchwicki: At Ford, we're driving innovation in every part of our business. It starts with Ford Smart Mobility, which is our plan to take the company to the next level in connectivity, mobility, autonomous vehicles, the customer experience, and big data. At CES in January 2015, we announced 25 global experiments, and added more in the first quarter of the year. Applying the learnings of an initial round of global experiments, we are moving from research to the start of the implementation of our Ford Smart Mobility plan. We are focusing our work going forward on two strategic areas - Flexible Use and Ownership and Multi-Modal Urban Mobility Solutions.

d What are some of the exciting trends in the world of automobiles both from the perspective of advanced Western markets and emerging markets, including India? Marchwicki: By 2030, two-thirds of the world's population will live in cities. With more people living in dense, urban environments, we anticipate significant resource congestion and infrastructure issues. Our Ford Smart Mobility plan is helping us figure out solutions to many emerging issues. Through the MyEnergi Lifestyle program and collaborations with utility companies, Ford is integrating the vehicle into the city and the home to help customers save energy, reduce emissions, and take advantage of renewable energy.

The second trend is the effect of automation. As I said, fully autonomous driving likely will be possible with the right combination of environmental and regulatory updates within five years.

Third, is the rise of digitally-native members of Generation Z - most of whom are still in their teens - mobility will be a unifier, and they will consider different vehicle options such as car sharing and ride hailing. 🚺



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Industry Connect

We are happy as long as people are clicking: Andrew Koh

At Canon's 6th Photomarathon in India, Andrew Koh, Canon India's Vice-President of Consumer Imaging and Information Center, gave us an insight into Canon, the state of cameras, and Canon's vision of India.



Andrew Koh, Canon India's Vice-President of Consumer Imaging and Information Center

Souvik Das souvik.das@9dot9.in

anon India arranged the 6th edition of Canon Photomarathon in India, and the prime photography competition saw many photography enthusiasts come together to participate in the worldwide contest. Mr. Andrew Koh, Vice President of Consumer Imaging and Information Centre for Canon India, was in New Delhi, and spoke about Canon's endeavours of spreading wider in India in terms of products, photography workshops and competitions. Here's what he had to share, on modeling photography ideas in India based on the likes of Singapore, where Canon Photomarathon has seen immense participation and activity.

How long has Canon been arranging the Photomarathon worldwide, and in India?

I'm thrilled to say that we've embarked upon our 6th edition of Canon Photomarathon this year in India. Photomarathon spans across ten Asian countries, bringing together photographic talents from Indonesia, Malaysia, Singapore, Vietnam, India, Thailand, Cambodia, Hong Kong, Taiwan and Brunei. Looking at the success of the platform, we intend to scale it up and hopefully engage enthusiasts from different parts of the world.

How many workshops a year does Canon India arrange, to promote photography?

We conduct more than 1,200 workshops in India annually across different categories in photography. We have an exclusive department called EOS Academy with a dedicated team of professional photographers and photography experts. They help customers in enhancing their photography skills in a fun and engaging environment. Apart from workshops, Canon also promotes various photo tours. Customers can register on the Canon edge website to become a member of the Canon Photo community and get information on workshops and other various photo tours.

As new DSLRs enter the market on different price points, how are Canon's existing range of DSLRs affected?

Product pricing is based on extensive market analysis and research. When a new product is launched, its price is determined by market acceptance as well as prices of comparative products. Canon is in the business of technology products. We're constantly reinventing ourselves to keep up with the fast pace of technological advancements, thus, assuring customers that they're buying the best.

d How have smartphone cameras impacted Canon's range of compact cameras?

There's a lot of clicking happening from smart phone cameras but we are happy as long as people are clicking. It is a great opportunity for us to keep innovating and add new technologies in the products which we offer. Canon has been focusing on the current compact camera portfolio especially in the Zoom range category and high end premium compact cameras. A better zoom and image quality; focus on HD video recording and low light photography are some highlights.

■ The Canon PowerShot G3X offers a compact camera body with a large sensor and 25x zoom, but lacks interchangeable lenses at a price point of INR 60,000. What section of the audience is Canon targeting with it, seeing that users have the option of buying a DSLR which does come with compact bodies?

With large sensors, high quality optics, exceptional build quality, a plethora of manual controls in a reasonably compact form, these cameras offer the best of style and performance for discerning users. The G series is targeted for anyone who is looking to create high quality images and also for people who already own a DSLR and are looking for a second camera.

For the entire interview please visit our website: http://dgit.in/AndrewKoh Esc

Community

Feel like smartening up your home? Learn how to switch your home appliances on / off remotely using Arduino.



One ring to rule them all?

Forget the smartwatches, here's a smart ring to control mobile devices remotely via bluetooth! http://dgit.in/FinWrblRng

Mad, madder, MADDEST!

While science is undoubtedly the guidling light of our civilisation, it too is wrought with individuals who pushed the envelope a little too much and indulged in Frankensteinian science or worse. Here are some of the maddest of the lot.



Andrew Ure

Bioelectromagnetics i.e. the science that started off with physicists zapping dead animals to study electrical patterns of the nervours systems had quite a few pioneers. But Andrew Ure wasn't satisfied with just animals so he got himself an executed killer and proceeded to stick electrodes in all places. What followed was is best described as a the first ever horror show.



Having been born at Castle Frankenstein, Johann Conrad Dippel literally dabbled in Frankensteinian science as he went about putrifying human and animal remains in his search for The Panacea (the mythical cure-all potion). What he got after distilling a bunch of animal bones was one of the foulest-smelling concoction known to man – Dippel's Oil.





Dr. Robert E. Cornish

Perhaps the only guy who actually succeeded in bringing someone back to life, Dr. Robert E. Cornish was a child prodigy who graduated at 18 and got his doctorate at 22. His experiments with two dogs which basically had them strapped to a see-saw and pumped with steroids minutes after death were successful. Alas! He couldn't get fresh human subjects for his experiments.



Walter Freeman

António Egas Moniz came up with lobotomy but Walter Freeman went to extreme lengths to popularise it. He'd prescribe lobotomy to almost everyone and his procedures had a success rate of forty per cent. The remaining sixty percent were rendered with reduced intelligence or worse...comatose. Among his victims was Rose Marie Kennedy, JFK's sister.

Paracelsus

Philip Theophrastus Bombast von Hohenheim was a man of principle! In an age where doctors would dictate rather than performing procedures themselves, he believed in a more hands-on experience. What's weird was his method to create a homunculus, i.e. human made through alchemy. Just mix human male gametes with horse dung and let it rot for 40 days.





Shiro Ishii

How do you test the efficacy of biological weapons? By testing them on humans of course, and then vivisecting them while they were still alive. Led by Shiro Ishii, Unit 731 was a Japanese research division which has no known survivors. What's worse is that all the knowledge gained was bartered for complete immunity. The effects of their experiments are still visible to this day.

544 27 44

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Facebook now allows you to donate and host donation drives for the needy http://dgit.in/DonateonFB



India to surpass US

India may have over 400 million internet users by the end of 2015, surpassing US http://dgit.in/IndiaIntMkt

Unwind

How we unwind



SKOAR! at IGX 2015

With the resurgence of gaming conventions in India, it was only natural that SKOAR! would be part of anything gaming! So we hauled our arses off to the convention centre and set up an impromptu LAN party for Quake III Arena. It was fun to mingle with the younger gamers and lay them to waste. Siddharth 100 - n00bs 0!

PBS documentaries

Those who dwell at the Digit Test Lab aren't just interested in tech keynotes, we consume an awful lot of documentaries and this month it was PSB's Frontline which was on the frontline. From *Bush's War* to *The Vaccine War*, each documentary was wonderfully done and had most of us hooked all through our lunch breaks.





It's back and it's better

After a dismal season 17 and 18, South Park has finally come out with a much better season satirizing more relevant topics like Social Justice Warriors, online advertising, gentrification, police brutality, idiotic Yelpers, etc. while maintaining the theme of political correctness throughout the season.

digit DIARY

Another year has gone by, people have come and people have gone. We've grown (not matured, there's still a long way to go before that happens) and we've groaned as yet another month of Zero1 has left us devoid of energy. But there's hope ... in a galaxy far far away. Star Wars episode VII is just around the corner and it's more than enough to get our hearts beating again!

As for those who've left (read: Raaabo) or have been ostracised (read: The Ant; we kid!) there hasn't

been much news. The last we heard from them, The Ant was singing praises of those of the Anglo-Saxon ilk. And Raaabo is without Internet, yes, even first world countries have their share of problems, his being an overzealously rescheduling handyman. Hopefully, he'll reconnect with the mothership sooner than later.

Meanwhile, Maggi made a comeback and Mr. Dey was taken in by their marketing and he quickly ordered the largest carton that he could online. While this definitely has gained him quite a lot of hip-

ster cred, it might not be too late for an intervention... or a sharp whack on his head maybe. Also, his Instagramming has reached new highs with a single post garnering over 150 new followers under 24 hours. Hipster cred +150.

One thing is for sure, Jayesh couldn't have hated this month more than any other. For starters, Anirudh and Mithun weren't around with the later only making guest appearances once in a blue moon like a puberty pimple, so he not only had his own workload but also had to manage theirs as well. Needless to say, he had to spend way too many nights at the office. And even at night, he couldn't get any respite as our Roomba would come to life exactly at four in the morning and scare the crap out of Big Daddy when he was at his lowest. As if that wasn't enough, something that Jayesh had been happily boasting about (unlimited OneDrive storage) got canned and he nearly caught the next

flight to Amreeka to have a word with Mr. Nadella. But amongst all of these unfortunate misgivings as Jayesh slumped down in his dejected state, a ray of sunshine gleamed forth from the clouds of misery. He finally ditched his clunky geriatric AIO and commandeered Anirudh's old rig. Finally, he'll be able to dust off his Steam library and start playing some proper PC games... for a month.

Team Digit now has a new member as Nikhil has finally decided to ditch his students and join up full-time. Little did he know that we were holding back till now

and are yet to unleash our fury unto him. Huehuehue!

In other news, we've managed to snag an "economically priced" coffee machine. As if it wasn't enough for the trolls of the Test Centre to be pumped up on sugary sodas coupled with Jayesh's incessantly running song loops, we'll now be snorting all the caffeine that we can get our hands on. Who knows, we might even start experimenting and come up with something better than Red Bull. See ya next year!



Digit Squad



Smarter Google Photos

Google Photos now manages space smartly by allowing you to bulk delete backed up photos http://dgit.in/GPBlkDlt





Every month we recognise the best article written by our community members and publish it here. Keep up the good work, Digitians!

Turn your regular home into a smart home!

With 2016 looming on the horizon, what could be a better way to welcome the new year than with a DIY project that saves your electricity bills and breathes new life into your appliances?



Praneet Sab

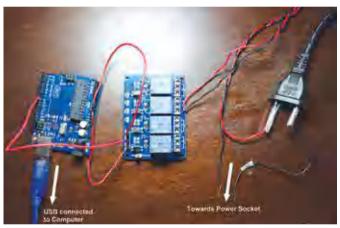
The idea of controlling your electric appliances from as far as the other end of the earth might sound like a sci-fi plot device straight out of an Isaac Asimov story. But in reality, it's quite feasible to turn everything - right from your washing machine, toaster, television, and air conditioners to even the lights and fans in your room - on and off from afar,

provided there's an Internet connection on both ends. All you need is a device that is capable of opening a website. So your phone, laptop, tablet or even smart-watch can do the magic!

This whole project is aimed at achieving the aforementioned task at the lowest possible cost by using duplicate-yet-good components and by substituting elements such as wires and Ethernet shields with "jugaad".

The main component here is an Arduino and a 5-Volt Relay (go through 'FastTrack: Arduino for Everyone' if you're not familiar with it). In a nutshell, Arduino can be described as a microcontroller that acts just like a computer but on a very small scale in terms of power and features. It is palm-sized and can cost anywhere between ₹500 and 2000 (Arduino is actually an opensource product which is why the duplicate-yet-workable model goes for ₹500 while the original one goes for the higher limit). In this project, I've used an Arduino 'Uno' because it gets the work done (and is more famous) and has got the option to add more sensors given the greater number of I/O pins.

The '5 Volt Relay' is basically a switch that can be controlled through digital signals (i.e via computer). It comes in different 'channels' which refers to the number of switches or devices you can control with it. Channels 1, 2, 4, and 8 are the most common types and I've used the "4 Channel 5 Volt Relay" but you're free to use any other relay. The 4-Channel relay will have 4 individual switches, each equipped with 3 connecting ports - Common, Normally Closed (NC) and Normally Open (NO). Don't make the rookie mistake of confusing these for the traditional positive, negative and the earthing ports that



Overview of the whole circuit

are present in an electric switch that you'd generally find on switch boards.

Since the objective is to control appliances from anywhere, we would, first and foremost, require a website. So the first step is to acquire a domain name and hosting space. You could either buy them or get them for free. If you are just experimenting, I'd recommend setting up your own local server using XAMPP, (a software which is absolutely free. It's a cross-platform web server that you can setup within minutes and you can then drop your files into the htdocs folder within the XAMPP installation. Accessing those files is as simple as typing 127.0.0.1 in your web browser. You will need the file to be named as index.php or index. html if you wish to access the site without having to manually type in the entire file name of the html / php file. Read up about it to know more, for you need to have created at least a 'hello world' website in the past to proceed with this venture and it's one of the easiest steps in this project.

In addition, you'd require some jumper wires; however, I wasn't able to find them anywhere in the cities I reside in -Bareilly and Varanasi. So you could either order them online or



The Real 3D Touch

Want to know how a real 3D Touch actually works that too with just a software? Check this out! http://dgit.in/real3DTouch



iPad displays compared!

Here is a comparison of the displays on the iPad mini 4, iPad Air 2 and the iPad Pro. Which one's the best? http://dgit.in/iDisplayComprn

Digit Squad



This is how your Arduino after connecting wires (labeled A, B and C in the image) would look like.

make your own, like I did. Same goes for the Arduino and relay, which are hard to find offline, especially when you're not living in a metro city.

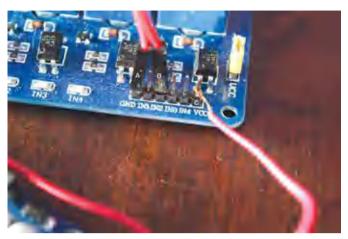
Let's walk through the whole list of all the required components once again:

- Arduino Uno
- 4 Channel 5 Volt relay
- A computer
- Jumper wires (regular wires would also work)
- Arduino IDE software (get it from https://www.arduino.cc/en/ Main/Software)
- 'Processing' software (get it from https://processing.org/down-load/)
- Hosting space and a domain name (for the website; however, XAMPP would also work)

This project involves two short programs that will be written in Arduino IDE & 'Processing' so it is recommended that you comprehend them well so that you can make your own changes later. Of course, a quick copy-paste job would also get the work done.

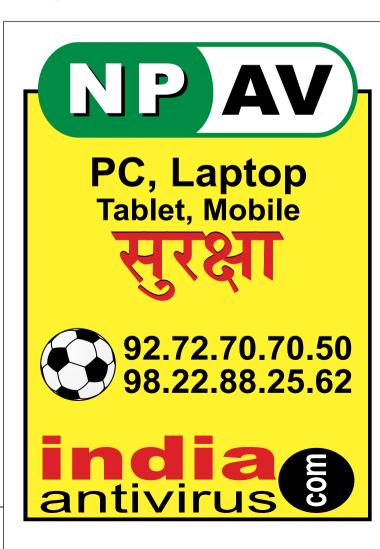
Let's talk about the basic functioning of this project. There would have to be two ends, one from where the appliance is controlled and the other being the website via which you'll give commands to either turn it on or off. The former would also feature the Arduino, relay and a computer (to receive commands from the website). Here, you could also use an Ethernet-shield instead of a computer on top of the Arduino, but then, why bother buying one, when your computer would work just fine? You would need to install Arduino IDE on the computer, of course – it would help to load the program onto Arduino while 'processing IDE' would be used to keep checking the website for the appliance status, i.e. whether to turn it on or off.

The other end is basically a website that we'll create. Its purpose is to simply display a button, which, on getting clicked, would update a value ('1' for on and '0' for off) in a '.txt' file, which in return would be continuously checked by the Processing IDE on the first end. Hopefully, this isn't the first time you're coming across 1's and 0's since Arduino uses them as flags for the different input / output pins. If it observes a change in value, then



Connecting wires (labeled A, B and C in the image) from Arduino to the relay.

the Processing IDE would write the desired value to the Arduino Serial Monitor and upon receiving it, send the appropriate commands to Arduino hardware via USB, which will then control the relay depending upon the command. Thus, the circuit would be made or broken. Sounds confusing? Worry not. Take a quick look at the whole set-up (on the appliance's end) which explains how the components would be connected.



AVG's 'Chime'

Antivirus comapny is taking help of crowdfunding to fund its project 'Chime' a router. Why? Read here: http://dgit.in/AVGRouter



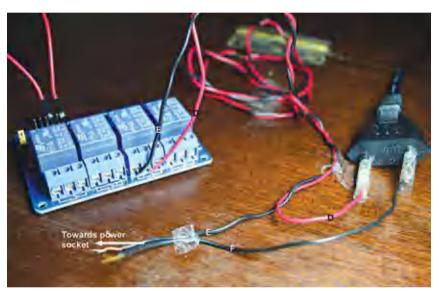
Ford launches Sync Connect

Forget keyless entry, how about starting your car using an app? Exactly what Ford's Sync Connect does http://dgit.in/FordSyncConct

Digit Squad

So, let's understand the connections. The Digital pin # 8 on the Arduino is connected to the "IN2" pin of the relay(labelled B in Image#3), which is basically used to send commands to the latter. The 'VCC' & the 'GND' pins of the relay are connected to the '5V' and 'GND' ports of the Arduino board respectively and these pins help power up your relay. If you don't have enough 'male-to-female' jumper wires, you could also use a general wire and remove its plastic insulator from both ends – with the help of some duct tape, you'll be good to go! The wires have been marked to help you identify the connections.

Let's connect the appliance to the relay. Before we begin, take a look at the connections in the image below. Take the plug of your appliances and use duct tape to attach two wires, red and black in color (i.e D and F marked wires, respectively). The F wire will



This is how you connect your appliance and the relay to power socket.

directly go in the traditional power socket while the D wire will first go into the relay's 2nd switch's 'Common' port(usually the middle connector of a relay) and a new E wire will be attached onto either the Normally Closed or Normally Open port of the relay, as per your wish. This other end of E wire will then go with the F wire, into the power socket.

Now for the final steps, connect the Arduino with the Computer using a USB and put the E & F wires in the 240 Volt AC power socket. Be extra cautious while handling this part, a slight mistake could even prove fatal.

Now open up your computer and set up the website. If my aim is to control lights from 'anywhere', I'd go ahead with a proper hosting and a domain name. You'd need to create a page named "index.html" that will contain the following code:

You can obviously add the magic of CSS to create something more interactive like http://www.PraneetSah.com/Arduino/. Finish up the website by creating the final 'control.php'.

Now upload these two files to your web server, and make sure they are accessible. Open up the website, type http:// www.your_website.com/, click on the text: "Click here to turn ON" and then check the directory of these files. You'll notice that a file called "status.txt" has appeared with its content as a single digit "1" and it would be accessible through http://www. your_website.com/status.txt. You can try again by clicking on the "Click here to turn OFF" text and the 'status.txt' file would be updated with its content as 'O'. And with that, we're done setting up our website.

The next step is to program our Arduino through 'Arduino IDE' and write a code in 'Processing IDE' that would check the 'status.txt' file continuously for content change. Open up your Arduino IDE and write the following program in it. I've used the 'blink' example given in the IDE and edited it a little to act as required.

Click on the 'Upload' button in the IDE, and open "serial monitor" from the 'tools' menu. Here, submit capital 'H' or 'L' to

check whether the appliance does, in fact, turn on or off, as per the instructions, or not. In most cases, it should, and if it doesn't, check the above steps again. Or if it switches on when "L" is submitted and vice versa, then simply exchange the places of 'H' and 'L' in the program written above. Make sure to close the serial monitor or else it will cause problem with 'processing IDE'.

Finally, open up the "Processing IDE" and type the following code in it. The entire code can be found at this URL: http://dgit.in/smrthmcode

In the above code, you would need to modify two things. Firstly, at the place of "Edit_1", you'd need to put a single digit numeric character to which the Arduino is connected. It is basically the "COM port" and you can find it in Arduino IDE →Tools menu →Port. However, if that doesn't work, try the trial and error method, starting from 'O' and going up to 15. Another thing you'd need to change is the correct URL

of your 'status.txt' file. Now, simply click on the 'run' button that looks like 'play icon' and you're ready to roll!

Open up your website and your appliances can now be controlled from anywhere! No better way to impress your friends, methinks. On a side note, if you're seriously going to put this into regular practice in your house, then make sure you implement some authorization on the website or else your appliances can be controlled by someone else too. Also, for heavy loads like AC or microwave, our 5V relay won't suffice and will malfunction; therefore, a relay which can handle heavy loads must be used. And lastly, exercise utmost caution in the course of the entire project since you're dealing with extremely high voltage that can even kill you. Good luck, happy building!

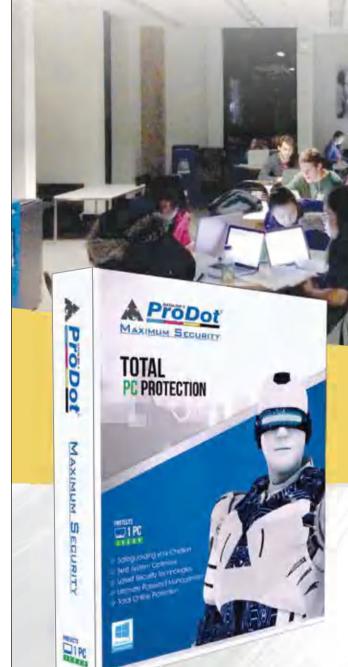
Disclaimer: This project involves working with AC mains power. Unless you have any experience with the same, it is advisable that you only perform the procedures mentioned in the article under supervision of a trained personnel. Improper handling might result in a fatal accident. Digit Magazine and it's parent company, Nine Dot Nine Media are in no form responsible for any accidents that may occur during the course of this project or otherwise and is not liable for the same.

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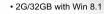
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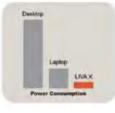
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Rajshekhar Bhatt

bhattrajshekhar@ecs.com.tw













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